

UNIVERSAL
LIBRARY

OU_164669

UNIVERSAL
LIBRARY

General Editor:

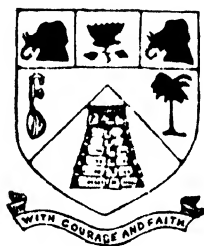
PROFESSOR B. V. NARAYANASWAMY NAIDU

ROAD RAIL TRANSPORT

(WITH SPECIAL REFERENCE TO CONDITIONS
PREVALENT IN TRAVANCORE, COIMBATORE
AND HYDERABAD)

BY

S. R. N. BADRI RAO, M.A., M.LITT.



WITH AN INTRODUCTION
BY

DR. B. V. NARAYANASWAMI NAIDU,
M.A., B.COM., PH.D., BAR.-AT-LAW

ANNAMALAI UNIVERSITY

1941

CONTENTS

	PAGE
Introduction	VII
Acknowledgment	LVII

PART I

CHAPTER	I.	General Survey	1
	II.	The Theory of Railway Rates ..	37
"	III.	Rate Making in Practice ..	63
"	IV.	Indian Freight Rates—A Study.	111
		1. Coal	115
		2. Tobacco	141
		3. Linseed	162
		4. Groundnuts	176
		5. Rice	191
"	V.	Some Aspects of Railway Administration	210
"	VI.	The Problem of Increased Earnings	267

PART II

"	VII.	The Economy of Motor Transport	296
"	VIII.	Transportation costs: A Study.	322
"	IX.	The State Transport System of Travancore	362
"	X.	The State Transport System of Hyderabad	399
"	XI.	The United Motors Service of Coimbatore	416
"	XII.	The London Passenger Transport Board	429
"	XIII.	The Organisation of Control ..	437
"	XIV.	Traffic Control in Madras ..	461
"	XV.	Legislation Abroad	475
"	XVI.	Conclusion	489

APPENDICES

	PAGE
Questionnaire	509
Statistical Appendices	511
A. 1-7. Statements pertaining to Working Results of Indian Railways ..	512
B. 1-8. Statements pertaining to Motor Vehicles in India	526
C. 1-27. Statements pertaining to the work- ing of the State Transport System of Travancore	537
D. 1-18. Statements pertaining to the United Motors Service of Coimbatore ..	564
E. 1-4. Statements relating to the London Passenger Transport Board ..	582
F. 1-2. Statements referring to the working of the Nizam's State Transport System	586
G. 1. Comparative Statement of Bus and Canal Transport rates in West Godavari	588
H. 1-2. Specimen forms of Bin Cards used on the United Motors Service of Coimbatore	589
Bibliography	591
South Indian Railway Map	595
Route Map of the U. M. S., Coimbatore ..	596-a
Graphs	597-99
Index	601

INTRODUCTION.

WITH the increasing integration of our economic life the part played by transportation has been growing in importance. There has been an all-round increase in industrial activity, characterised by the inevitable trends in business cycles. The history of the first four decades of this century has been a history of peace and turmoil, of trade booms and depressions. But amidst this welter of confusion and chaos, humanity has steadily progressed. Nay, the very factors that threaten the foundations of our civilization have, in a way, set the pace of our industrial activity. In an atmosphere of suspicion and incertitude men and material have been devoted to ends that may prove destructive to civilization. There has been for this reason a quickening in the pulse of industry and trade, and the exigencies of a chaotic and belligerent world have led to a speeding up in production and distribution. A complete and efficient means of transportation, always so very essential for national economic development, has become indispensable now. In the matter of transport, roads and railways are the most important agents of progress.

For nearly a century now we have had to depend upon railways as our chief means of communication, and to-day they continue to hold their position of primacy. But, from the beginning of this century and specially after the Great War of 1914-18, a new problem has been set for the railways. The advent of the motor-car and its increasing use both for public and

Road-Rail Transport

for private purposes have resulted in the gradual diversion of a good part of the traffic from the railways. This competition between the road motor and the railways was specially acute during the last decade, and so serious did the problem become that in 1933 the Government of India appointed the Mitchell-Kirkness Committee to investigate this problem and to study the extent of road-rail competition in the various British Indian provinces. Subsequently, the Road and Rail Conference sat in discussion over the question. The Otto Neimeyer Committee drew pointed attention to this disquieting situation and called for a thorough study of the question. The Wedgewood Committee was therefore appointed in 1937 for the purpose. On the recommendation of all these Committees we have had of late, a number of pieces of legislation directed to control the road-motor industry and to check the mal-effects of such competition.

The problem of Road-Rail transport has been one of burning interest, and it was with the idea of making a study of it that Mr. Badri Rao took it up for investigation under my guidance. The thesis which was the result of two years' labour, from September, 1937 to September, 1939, was submitted to this University for the research degree of Master of Letters.

In this book the author has made an earnest attempt to study his subject dispassionately. He has herein adopted the procedure of dividing his study into two parts, taking up the railways for consideration first and motor transport second. In the first part pertaining to railways,

he has taken the railway problem in its entirety and has critically analysed the underlying basis of freight rates especially in the south of Madras in order to appraise their justifiability. In doing so, he has taken a few commodities for detailed investigation. He has followed this up with an incisive study of railway administrative policy and has subjected the various heads of expenditure to close scrutiny. The end he has kept in view has been to see how far railway rates could be further lowered by economic expenditure and sound policy. In order to make the study comprehensive and to point out how railway practice differs from theory, the author has taken great pains to clarify the theory and practice of railway rates. In his study of freight rates and administrative policy, he has also demonstrated, wherever necessary, the points of contact between theory and practice. In short, he has rightly sought to make this theoretical discussion serve as a background to what follows. Suggestions for the increase of receipts and revenue have been offered in the chapter on 'The problem of Increased Earnings', and the 'Conclusion' focuses attention on the correct policy to be adopted.

In his detailed investigation of road transport, the author has confined his study to motor transport, as the other modes of transport are not of equal importance. Nevertheless, he has, wherever necessary, dealt with the other means of road transport. The author has ably striven to study the operational basis of road transport alone, so that the question of road finance and the theoretical basis of taxation have not been gone

into, as it would have inconveniently enlarged the scope of this study. In the first place, the position of the motor vehicle as a purveyor of transport and the factors underlying that position, have been looked into. He follows this up with a detailed and critical study of the costs of road operation and fares so as to enable a proper appreciation of their competitive ability. A valuable and illuminating survey of the transportation systems of Travancore, Coimbatore and Hyderabad has been made by him to show how smoothly well-organised transport systems could function; and a brief sketch of the London Passenger Transport Board is given as a foil. Finally, the need and method of control have been demonstrated, and in the last chapter a powerful plea for the co-ordination of the two means of transport has been put forward. The merit of the whole book rests on this study, as it consists of sound and thoughtful views based on an intensive study of two of the largest transport systems in the south of India. The surveys undertaken by Mr. Rao have been detailed. He has spared no pains in collecting all available information, and he has intelligently used his data to support his deductions.

The first chapter gives a bird's-eye-view of the existing facilities, and a comparison is instituted between the respective spheres of influence of road and rail transport. As the aim of the author has been to study the question just in those respects in which it affects the position of the two means of transport as they exist to-day, the historical method of treatment has not been given due prominence. None-the-less, this

method of approach has been adopted wherever it has been found necessary. The first chapter, therefore, sketches the development of road and rail transport, and commences with a short account of the importance of transportation as an agent in enhancing 'value' and shows how it is an integral feature of an exchange economy and how it leads to economic development. The author then traces the history of road-making and makes copious references to the road engineering activities of the Indian monarchs through the centuries and concludes that though the credit of having planned our present road system goes to our British administrators, India was famous for its roads even as early as the times of the Mauryans.

The early road policy of the British seems to have been largely dictated by military needs so that our present road system consisting of nearly 82,300 miles of metalled and 225,000 miles of unmetalled roads, has been the result of a long and laborious process of engineering. The author then proceeds to a discussion of the adequacy of our road communications and their place in our economy. He shows with the aid of statistics that the Madras Presidency is the best served Province in this respect, having an area of nearly 4.4 sq. miles for every mile of road. Over 50.3 per cent of the total area of the presidency is more than ten miles from any railway so that the dependence of the presidency on road communications is inescapable.

The responsibility for the maintenance of the roads is divided among the Public Works Department, the District Boards that look after

Road-Rail Transport

the trunk roads, the Municipalities and the village Panchayats. Besides these, the Forest Department has its own small share of roads to maintain.

The cost of maintaining this extensive system which, it is shown, amounted to more than Rs. 150 lakhs in 1928, is met partly out of loans and partly out of revenue, though the major expenditure is from local revenue. In 1930-31 the expenditure from local revenues was more than Rs. 202 lakhs as against Rs. 29 lakhs from Provincial revenues. The loans are made by the Central Government out of the Road Development Fund, constituted, on the recommendation of the Committee on Road Development in 1924, out of the proceeds of the Central tax on petrol. The allocation of these grants would be seen to be on the basis of the Provincial consumption of petrol. The other heads of revenue are the tax on motor vehicles, Central as well as Provincial, the provincial duty on the retail sale of petrol, taxes on tyres and spare parts, etc. The author is of the opinion that the abolition of the tolls has led to a considerable shrinkage in local revenues. In consequence, the finance of local bodies has been seriously affected as is evidenced by the sad state of our roads to-day. He regrets the exemption of bullock carts from taxation and advocates a system whereby the destructive qualities of the narrow-tyred vehicle will be suitably taxed. He concludes by saying, "the need for constructing and planning new roads so as to give access to the interior to tap the rural parts is all the greater if the present motor competition with

the railways is to be eased. More than anything else, steps should be taken to improve the wearing qualities of the road and to introduce a new type of cheap road that would adequately meet the demands made by modern traffic on them."

Next follows a brief resume of railway development. Railway construction under State management and the guarantee system are described succinctly. The old guarantee system is criticised by the author on the ground that it checked the urge for economy as "the control exercised by the Government was general and the only incentive to economy was the probable share in the surplus." State construction was out of favour, earlier experience having proved that Government could not work on a commercial basis; so a modified form of guarantee was adopted in 1880. Together with this the old theory that only productive lines should be undertaken for construction under Government aegis was given up, and it was rightly felt that the State should take up the unproductive lines themselves, as private enterprise would be wary of such schemes. Branch line construction was aided with concessionary grants and guarantee of interest. The present heterogenous railway system has thus been the result of a process of trial and error, and this could be attributed to both lack of foresight and continuity in policy.

A few paragraphs are devoted to a consideration of the relative spheres of influence of the road and the railway and to the measures the railways should adopt if they are to maintain their solvency. "The railways can no longer view with indifference the needs of the public.

Road-Rail Transport

The days when they held almost a monopoly in transportation are gone. To-day, as never before, transportation needs effective salesmanship. The railways can only hope to better their financial position in two ways. Firstly, they should prune away their expenditure as the need for economy is great Secondly they should attract custom by offering facilities." Under the first head are advocated measures intended to make a better use of the rolling stock and to effect a greater economy in workshop organisation. As instances of the second are the quotation of liberal freight rates to facilitate traffic moving in bulk, grant of sites for industries and provision of railway sidings. The need for introducing new services such as express goods services, registered transit, containers and refrigerators, is abundantly stressed. In short, the author emphasises the dual aspects of the problem by pointing out that there is need for economising expenditure and for increasing the revenues.

The Road and the Rail as purveyors of traffic are complementary to each other as each has an important part to play in our transport economy. Every measure should therefore be devised to effect a co-ordination between these two services and in trying to suggest such schemes the author examines the case for voluntary co-operation, and the monopolisation of road services. He feels that the control of road motor transport should be intelligent and that the system of licensing and registration is fraught with the least inconvenience. "In the exercise of this control, the three guiding

maxims should be those of public need, priority of service and protection of rival interests." A road monopoly is effective in doing away with inter-motor competition, but to be really useful it should be run as a public utility concern. A private monopoly may bring into being a new and far more serious type of competition. Thus control has to precede co-ordination and any measure intended to achieve this either voluntarily or statutorily deserves serious consideration. The sovereign end in view should be to give to the public the benefits of an efficient transport system while preserving to each its respective sphere of operation.

The second and third Chapters constitute an essay on the theory and practice of railway rates. The subject is not new, but it has been included in order to make the book comprehensive. The method of treatment is exhaustive. Chapter II examines the theoretical basis of railway rates and shows how they partake of the characteristics of 'prices' and are payments for service rendered. Being prices, they have to adhere to costs and it is in the determination of these that the greatest difficulty seems to arise. Railway costs are largely common such as the terminal costs, the expenses pertaining to the station staff, depreciation charges of the rolling stock and the wear of the track, besides a host of other expenses too many to enumerate. These have to be borne irrespective of the traffic carried. Another characteristic of railway costs is that they are largely fixed and these two factors together make it very difficult to apportion costs. Nevertheless, as the author goes on to point out,

it is possible to alter the proportion between fixed and varying expenditure; and one method of effecting this, he suggests, is by increasing expenditure. In passing, a reference is also made to geographical control in railway expenditure.

Having postulated these characteristics of railway costs, the study of costs is pursued in relation to the cost of theory principle. In doing so, the connotation of the word 'cost' is intelligently gone into, i.e., whether it should include all the expenses incurred in the service rendered or just the 'additional costs.' The idea of a margin in railway costs is carefully explored, and the view is expounded that "the guiding factor in rate fixation would be the extra expense that would be incurred in handling this freight, and any return that covers this out of pocket expense would be preferable to allowing the traffic to go elsewhere." The chief end in all transport undertakings is to get all the traffic available and in trying to do so the railways should offer special rates for particular kinds of traffic. It is in the practical application of the cost of service principle in rate making that its impracticability is made obvious. The points of criticism that are levelled against it are (1) that there could be no uniformity in the rate structure as costs would vary from place to place and time to time; (2) that it is impossible to determine costs even before the traffic is handled so that there is necessarily an element of arbitrariness in all cost accounting; and (3) that a rigid application of this principle would penalise agricultural and mineral com-

modities of low value and great bulk which in a country like ours form the bulk of railway freight. Though subject to all these drawbacks the cost of service principle is acclaimed as having the great merit of fixing the lower limit of chargeability.

Under the value of service, instead of rates being made to conform to cost, they are made to conform to value. Transportation creates and enhances utilities of time and place so that the net increment in value measures the extent to which the commodity could be charged. In short, this added value would set the upper limit; and, within the upper limit fixed by the ability to bear and the lower one set by the extra cost incurred in its handling, there is a margin which allows of commodities to be charged according to the value of the service rendered. The ultimate criterion is that of 'what the traffic can bear.' It is this "ability to bear" that is the bedrock of a sane tax policy and to that extent the 'value of service' principle approaches the principle of taxation. Therein consists its virtue. Nevertheless, there is great need for caution in the arbitrary power to determine the particular class to which a commodity should belong, for it is capable of being well and ill used and much of railway case-law centres round the great question of discrimination.

The author then discusses the case of equal mileage rates and zone tariffs and disposes of them on the ground that the former does not take into account the physical basis of railway operation and penalises low-valued traffic, while

the latter is impracticable and would work only under monopolistic conditions. A short reference to the 'agreed charge' is made, and the final conclusion is arrived at that in theory the best principle to be adopted would be to charge according to the value of service rendered taking also into consideration the lower limit of chargeability set by the cost of service.

The chapter on 'Rate making in practice' has been devoted to an account of the pitfalls that beset the railway in rate-making and shows how, occasionally, practice differs from theory. The treatment is complete and almost every aspect of the question has been dealt with. In doing so, the author has sought to strengthen his views by numerous references to railway operation and disputes abroad. America, Canada, South Africa and Australia are referred to, and in the absence of original documents the author has cited examples second-hand. The study, however, does not in any way suffer on that account, as the references are made only whenever necessary and are suitably acknowledged.

Dealing with the problem of the classification of goods, the practical difficulties arising therein are expounded. It is abundantly shown that classification is a matter of public importance in the conduct of which due consideration should be given to all interested parties so as to focus attention on the issue and to obviate any difficulties that might otherwise creep in. There could be no finality about it, since freight rates must be in accord with general business conditions. The Indian classification, it has been

shown, errs on the side of brevity, and though too great a uniformity is deleterious, an undue lengthening of the classes is not commendable.

The nature of railway rates is then described, and a more generous declaration of station-to-station rates is recommended in order to make the movement of freight traffic easy. The 'Schedule rates' are also dealt with and due regard has been paid to the various minimum weight conditions. The author shows that 'Exceptional rates,' are largely 'developmental' in character and are intended to single out particular commodities or industries for advantageous treatment. He further explains how the declaration of such concessionary rates is in the interests of the railway, as nascent traffic could be nursed and the benefit of a rate increase enjoyed when it has been fully developed.

'Distance' and 'volume' as factors influencing railway rates have been carefully considered. The distance factor is of special importance in vast countries like India and the relevant sections in the Canadian and North American Railway Acts have been referred to. The American Long and Short-haul clause has come in for detailed examination and the possible manner in which distance is responsible for the quotation of competitive rates has been investigated with great care. This inevitably leads to the discussion of through traffic, and the author, while decrying individualistic policies in rate quotation which only make terminal charges appear more progressive, makes out a strong case for the adoption of the continuous mileage principle in the making of rates for through

traffic. As he says, "It is an axiom that railways are always subject to the law of diminishing costs and that, as a consequence, the longer the haul, the less must be the rate." But, when through traffic has to be considered a real difficulty arises, for the special maximum distances of each railway may be much below the minimum required for fixing through rates. Nevertheless, the need for fixing such a rate can hardly be emphasised too much in a country like India where freight traffic forms an important contributor to railway revenue.

The paragraphs dealing with the influence of competition in rate-making bear witness to a close study of the subject and of every aspect of the problem; competition between railways, competition between railways and other means of communication, competition between different routes and competition between different shippers for favourable rate reductions have all been elaborately dealt with. It is here that the author has relied on Jackman for his citations of American case-law. Inter-railway competition must be put down firmly, as an unnecessary duplication of services is condemnable. Road-Rail competition, especially on the passenger side, is now a problem to be reckoned with, and it is very difficult for railways to meet this competition as their high capital costs prevent them from meeting the low rates of the road haulers. In illustrating the influence of different routes in competition, the author refers to the competition of North Carolina and New England for the cotton of Georgia. With regard to the last type of competition the author says:

“Market competition and competition of transportation facilities are inseparable. It is the conditions that prevail in the market that reflect themselves in the sphere of transport. Much of the competition that exists in the former is due to the grant of rates such as to suit their needs and to meet the particular conditions that call for adjustment.” ✓

The chapter concludes with the section on discrimination. The different ways in which preference could be shown are next demonstrated. These consist (1) in the railways nullifying the effects of commodity competition through an equalisation of transportation costs, (2) in the declaration of special rates for particular commodities, (3) in wilfully allocating a commodity to a lower-rated class and (4) in so manipulating the time and conditions of such rates as to apply only to the particular traffic that is intended to be so helped. The case of the Bombay, Baroda and Central Indian Railway *vs.* the Grain Merchants of Ajmere is quoted as an instance of undue preference which was contrary to the meaning of sections 42 and 43 of the Indian Railway Act.

The main strands of thought are taken up in the last paragraph and the chief points are reiterated anew. The nature of railway rates is neatly summed up concisely thus : “In short, railway rates are purely empirical, subject to change and they have got to harmonise with the general economic conditions; the purveyors of traffic are as much interested in their customers as the customers are in themselves,

Road-Rail Transport

since their prosperity alone would ensure the prosperity of the transport agencies.”

The formulation of the theory of railway rates has been followed up by a study of freight rates in respect of a few commodities. The commodities chosen for such consideration are coal, tobacco, linseed, groundnuts and rice. The method of treatment adopted is comprehensive, and the importance of the commodity chosen for study is well brought out by a concise statement of its position in our national trade and a reference to such disabilities as it may be suffering from. This is strengthened by the aid of figures, and the chief merit of the thesis rests on the wealth of statistical data collected together. The author was seriously handicapped by the unencouraging attitude of the railways in the matter of statistical help so that he has had to rely to some extent on Governmental blue-books. There is nothing strange in this, as the Agricultural Marketing Department themselves recognised the dearth of information. Mr. Rao has, however, ably striven to gather such information as he could and has presented his case creditably. One remark must, nevertheless, be made here with regard to his deductions. The period of his investigations concluded with the September of 1939, though the thesis was actually presented in March 1940. The Syndicate of the University accorded sanction to the publication of the thesis sometime last August, and owing to pressure of work it was not possible for me to publish this work earlier. In consequence, the conclusions are based on the figures available upto the time of his investigations, when the

effects of the present world conflagration had not sufficiently worked themselves out. Much water has since flowed under the bridge as is evidenced by the present catastrophic fall in the price of groundnuts and the duty levied on rice by the Burma Government. Nevertheless, as we go to press brief notices of such trends in prices are made in the shape of footnotes to the text. The present tendencies, far from detracting from the value of the book, support the conclusions arrived at, for, if anything, they render the present freight rates more regressive.

Indian industry has to depend largely, if not entirely, on coal. The importance of the coal industry may be seen from the figures relating to it. The net output of coal in 1939 was 24,663,000 tons, representing a value of Rs. 8,69,62,000. There has been a fall in the output from the previous year's figures owing to lesser production from the Raniganj, Jharia and Karanpura coalfields. The decrease in value is to the extent of Rs. 76,65,000. In consequence of the increased demand for the mineral, the export figures rose from 2,207,000 in 1938 to 2,629,000 in 1939. The Chief Inspector of Mines in his report for the year 1939 remarks, "The market opened firm at the beginning of the year and prices were steady until the end of May, when the recurring annual wagon difficulty ceased and supplies were made in full against colliery indents. Demands then showed a considerable falling off, and in August prices had fallen considerably. Stocks began to accumulate at collieries and some concern was felt at the downward trend of prices. The outbreak of war,

however, resulted in a sustained demand for coal and at the end of the year prices were more or less on the same level as in January, with stocks being rapidly cleared."

So important are the mining and transport of coal in the development of our industries that they are next taken up for detailed investigation.

The first half of this section is historical in treatment and the gradual development of the coal mining industry and the various changes in the freight rates are traced. The ability of foreign coals to compete with Indian coals is looked into, and the superior position of foreign coal in the Indian market is attributed to their low pithead price and to Government subsidy. In doing so, the cost of working the mines and the freight rates are dealt with. The conclusion derived is that unless the costs were more than halved, indigenous coal would be unable to meet the competition of the South African, Australian and Japanese minerals. The coal-mining industry already handicapped thus, had to face a serious situation on the outbreak of the Great War of 1914-18. The exigencies of war led to a great demand for wagons so that there was a reduction of about 75,000 wagons available for general traffic, whereas there was an increase of 73,000 in the case of coal traffic. Instead of devising means of easing the wagon shortage the Government sought to overcome the difficulty by raising freight rates; but this only checked Indian coal exports. The revised rates in April 1920 had, it is shown, the effect of penalising long distance traffic while there was a concomitant rise in the cost of working the mines. The

effect of these combined forces, viz., wagon shortage, increased production, exports embargo and regressive railway rates, was to stultify the industry and to press it to demand for a reduction in freight charges. Some relief was afforded in 1926 when roughly a 10 per cent. reduction on long distance traffic exceeding 400 miles was granted. This small concession reflected itself in increased revenues to the tune of nearly Rs. 46·6 lakhs under this head in 1927-28.

Just at a time when the prospects of our coal trade were brightening, the precipitation of the world slump resulted in a shrinkage of our coal exports. Our exports in 1936-37 were nearly a third of those in 1928-29. Added to this Natal coal was gaining a foothold in the local market. On top of this came the crowning iniquity of a surcharge of 15 per cent. on coal freights in 1932. The subsequent alteration of this to 12½ per cent. in 1935 did not stem foreign competition. The author points out that the net railway freight rates for Poniaty seam coal at Bombay in 1936 formed nearly 42 per cent. of the F. O. B. price of Rs. 6. Notwithstanding the slight increase in rebate of 8 annas on coal exports to foreign ports, the industry continued to be in a bad way.

The author draws pointed reference to the wagon shortage on Indian railways and has anticipated rightly how very acute the position would be in the course of this war. He has based his deductions on past experience and on the figures of wagon loadings. The average of

17,339 wagons loaded daily during the period ending February 1940 is a record. He has also examined the feasibility of quoting seasonal rates whereby industries could accumulate their stocks during the slack season. Finally, the present $12\frac{1}{2}$ per cent. increase in freight rates has been criticised on the ground of inexpediency.

The next two sections of the book deal with tobacco and linseed. Here too the same procedure has been followed. The importance of each crop has been shown with the figures for the acreage under it, and the total volume and value of the internal and external trade in them. Figures relating to the heaviness of the railway traffic in them are copiously given. This is followed up by a study of reigning prices as it is necessary in estimating the reasonableness of the rates charged. With regard to tobacco it is shown that the price depends upon the strength of the demand, which is greatest during the months of March to July, i.e., immediately after the harvest. There is also some traffic in tobacco during November and December, owing to the fact that sometimes tobacco is cured and then sold. In the case of linseed the price would seem to depend upon the comparative prices of other oilseeds such as mustard and gingelly which are used as adulterants. Having discussed the question of prices, the nature of railway rates is examined. Both schedule rates and station-to-station rates are referred to, and a number of rates are taken up for scrutiny. The incidence of freight rates on prices would necessarily differ in different cases, being higher in the case of short-distance traffic. In the case of broken

tobacco, to the shipper from Guntur to Lahore the incidence works out to as high as 150 per cent. Contrariwise, for shipments from Mysore to Bangalore, it works out to only 2·5 per cent. In the case of linseed, the incidence would roughly be between 10 to 15 per cent. Here, however, it is interesting to note that it would be cheaper to ship the commodity as such, instead of first crushing it and sending it as oil.

The author's general conclusion is that every reduction in the incidence of freight rates on prices should be welcomed, though that rate may vary with the distance covered and the quality of the commodity shipped.

The groundnut occupies an important place in our economy and there is a very rich trade in it in the Madras Presidency. In 1936-37, there were 3,427,000 acres under this crop in this Presidency with an estimated yield of 1,652,000 tons. The year 1937-38 proved to be a record one for the crop and the net out-turn was 3,501,000 tons. In 1938-39 our exports, however, of this oilseed amounted only to 8,35,000 tons. Further there was a shrinkage in the foreign demand, so that there was a very sharp fall in price from Rs. 36-1-4 in 1936-37 to Rs. 24-4-0 in March 1938-39. At the time of writing, the prices were fairly steady though below the figures of the previous years so that the author says, "During the last two months of 1939, the market for groundnuts was fairly steady. The average wholesale prices for standard varieties were, for a candy of 530 pounds between Rs. 28 to Rs. 30-15-0 at the various centres on the 30th November, 1939. The prices on the 22nd December fluctuated within

Road-Rail Transport

a very narrow margin, the prices for the main producing centres being Rs. 28-0-0 and Rs. 28-2-0."

Notwithstanding this early steadiness, there has since been a cataclysmic fall in prices, and the outbreak of the present war has had far-reaching consequences so that the groundnut trade has been almost crushed out of existence. In 1938-39 the exports to Belgium, Italy, France, Germany and the Netherlands nearly amounted to 70 per cent. of our total export trade in that commodity. All these markets have now been lost to us. In consequence, the Government were asked to fix a minimum price for groundnut and it was fixed at £10-0-0 per ton in consultation with the Food Ministry. This acted as a palliative for a short while, but as the Food Ministry would not increase its purchases the landslide in prices continued and reached the low level of Rs. 20-0-0 per candy at the ports. So unprofitable did it become that cultivators could realise only about Rs. 12-0-0 per candy after meeting freight rates, landing charges and market dues, whereas the actual cost of the unirrigated crop amounted to nearly Rs. 20-0-0. In South Arcot, which is one of the chief groundnut producing areas, it was cheaper to sell imported oil at Rs. 3-0-0 per ton than local oil, and many instances have been known wherein oil presses have been sold for scrap.

The groundnut position was causing serious anxiety. The Government convened a conference to discuss methods of restricting the acreage under this crop, and in the conference

it was proposed to compensate groundnut cultivators by the grant of a specified sum as subsidy. In order to provide the necessary funds for this, resort would be had to the rebates now being levied by the Central Government at the rate of 25 shillings per ton on South Indian shipments and 15 shillings per ton on Bombay shipments.

In view of these developments the opinions expressed in the text of this book need considerable modification. But these in no way affect the general conclusion that the author has derived in regard to the regressiveness of freight rates on groundnuts. On the other hand, they only strengthen his case for rate reductions and preferential treatment as the incidence of freight is bound to work greater hardship with the fall in prices.

The need for including a section on "Rice" is obvious, as India, besides being one of the largest rice-producing countries, is a large importer of foreign rice, principally from Burma. In the decennium ending 1935-36 there was an acreage of nearly 80 millions under this crop in India, whereas the figures for Madras Presidency alone amounted to nearly 9·8 millions. In 1937-38 the percentage under this crop to the total area under all crops was 27·5. India is, however, on balance, a net importer of rice. The export figures given in the text of the book refer to a ten-year period ending 1935-36, i.e., prior to the separation of Burma. The imports of Burmese rice have been continually increasing and the position as it affects this Presidency has been clearly described. A short historical sketch

Road-Rail Transport

of the trends of the foreign trade of this commodity has been included, and this aptly leads to a consideration of the measures devised by the Government of India in checking foreign imports. It would be seen that, whereas in 1937-38 we imported Rs. 10·98 crores worth of rice from Burma, our imports of the same in 1939-40 increased by nearly 50 per cent., to Rs. 16·65 crores. The main cause of this has been the remarkable failure of the Indian crop in 1938-39. The net out-turn of the crop in 1938-39 was nearly 23·6 million tons as compared to 26·8 million tons in 1936-37.

The author has instituted a study in prices and, with the aid of price indices for various varieties, has shown how, owing to the cheap imports, prices have steadily declined. Added to this, "the rigidity of the land revenue, despite some remissions and concessions, has hit the impecunious agriculturist very hard." However, for the past three years the prices have been fairly steady, the January quotation in 1939 being Rs. 3-12-0 for a maund at Calcutta. This has been attributed to the changes in the price of Burma rice, brought about by the general price-increase in every sphere of industry and trade.

A number of freight rates pertaining to rice have been taken up for detailed consideration. These are instances of short distance and through traffic; and the incidence of particular freight rates on the prices of particular varieties has then been investigated. The incidence of the rate from Gwalior to Cuddalore has been calculated at **20 per cent.** and that of the rate from Coconada to Tuticorin has been found to be

20 per cent. The comparative basis of long and short distance rates is next examined and the view is held that though the incidence in the case of short distance traffic is less, actually, however, it is more regressive in character. The general conclusion is that "commodity grain movements do not take place between primary markets but between the producing centres and the main distributing centres. In India these are invariably long distances apart so that there is great need for the lowering of rate charges on long distance traffic, especially since it (rice) constituted our principal food grain." This observation is very interesting in view of the duty on Burmese rice exports. The Burma Government seem to hold the view that the export duty would affect only the Burmese shipper but it needs no stretch of imagination to see that the duty will not stick. The incidence would be shifted on to the ultimate buyer, i.e., the Indian importer and this would necessarily leave a smaller margin for the payment of railway freights. A great change in the freight position would therefore be very desirable.

The dependence of freight rates on costs necessitates a study of railway policy in regard to expenditure and this the author does in the chapter on "Some Aspects of Railway Administration." This chapter is devoted only to those aspects of the problem which affect railway revenues. It commences with a brief history of the financial position of Indian railways after the separation of the Railway Budget. The effects of the depression are nowhere more pronounced than in the case of the railways.

“The depression period has been one of lean financial years during which, in spite of the best endeavours of the transportation agencies, deficit budgets have been the vogue.” With the revival in trade and industry the position improved but it has been followed by the stress and strain of the present world conflagration. In 1925-26, for example, the gross revenue receipts of all railways were Rs. 99·71 crores. In 1927 they rose to 104·34 crores and in 1932 they reached the lowest figures, *viz.*, 85·58 crores. The year 1936-37 marks the increase in receipts to over Rs. 101 crores and this progress has been steadily maintained. The author has gone into the main problem of railway administration and has carefully analysed railway revenues, working expenses, passenger and goods earnings and has dealt with the question of strategic and branch lines. In doing so, he refers to the debated question of the interest charges which in 1939 reached the figure of Rs. 28·96 crores. While agreeing that a slight reduction in the rate of interest would mean a great saving in expenditure under that head, the author feels that such a procedure would not be generally feasible. Viewing the whole question dispassionately, he thinks that these charges are a necessary payment to the capital at charge and he does not decry the foreign nature of the capital. “All new enterprises,” he says, “are risky, more so railway construction whose financial prospects cannot be gauged at the beginning; . . . foreign capital was invested at a time when the risks entailed were greatest and the ground had to be cleared before the railways came to be recognized as a sound financial venture.” He then adds

“Blind criticism is, therefore, a fallacy. In the dispassionate study of problems of economics, politics should not jaundice our vision.”

Branch line policy, in view of the recent developments, has been one of growing importance. In the beginning it was not looked upon with favour as the traffic expected was light. Private enterprise was tardy in appearing so that the Government had to make the terms of contract sufficiently attractive. For doing this the persons best fitted were the main-line companies for they could take advantage of the traffic interchanged between these lines. A branch-line, by its very nature, cannot be expected to be as profitable as a main line, and in this study the author discusses the question of the basis of rate-making on branch-lines. The position to-day is disquieting as the rapid and increasing competition of the road-vehicle has led to a serious diversion of passenger traffic from the railways. However as the sphere of influence of the motor is within a fifty mile radius it would seem that the road vehicle has a legitimate part to play in the offering of transport facilities. The financial prospects of certain branch lines are so uncertain and discouraging that the Government has seriously contemplated dismantling them. At present nearly 260 miles of branch railway have been dismantled and the rails have been shipped abroad for purposes of war. The cost of these, together with the incidental costs of dismantling and transportation will be entirely borne by His Majesty's Government. The following are the lines so dismantled: Dalmat—Daryapur (14 miles);

Akbarpur—Tanda (1 mile); Bijno—Chandpursian (21 miles); Cocanada—Kotipalle (29 miles); Shoranur—Nilambur (41 miles); Dawwa—Pusad (43 miles); Cawnpore—Kairada (81 miles); and Lyalpur—Saranivalla (2 miles). The original proposal to include the Kalukhat—Bhatiapara, the Bariava—Vadtal and the Vasad—Kauhara lines of 57, 4 and 27 miles respectively has been temporarily held in abeyance. As early as 1933 the Mitchell—Kirkness Committee made a detailed investigation of the proposals submitted to it for branch-line construction. “It classified the projects into six categories as (1) those that could be abandoned in favour of good roads (2) those which probably cannot be justified owing to the existence of good roads (3) projects probably justified by traffic offering, especially heavy merchandise even where good roads exist, (4) those that may be required urgently as through-connections, (5) projects which may be required as through-connections and (6) those which can be abandoned for various reasons.” It is with regard to the last that there has been considerable controversy. The chief reason for the dismantling of the railways is their unremunerativeness. It is also felt that the existence of other means of communication makes them unnecessary. The real question is whether these lines are superfluous. In trying to gauge their financial worth, the return should not be calculated on the basis of the capital at charge but on that of the depreciated value. The chapter concludes with a sketch of the functions of the Federal Railway authority.

In the chapter on "The Problem of Increased Earnings," an attempt has been made to suggest ways and means of increasing receipts. The need for the establishment of a Research Department which would actively interest itself in the commercial needs of its clientele is first stressed. A plea is made for a closer contact with the public and the provision of larger facilities. These largely consist in electrification of services, pooling of traffic, simplification of clerical formalities, publication of goods time-tables, speeding up of services and similar measures. In recommending electrification, the comparative costs of steam and electric power are referred to and it is concluded that though much cheaper and more convenient, electrification in India would be possible only with regard to suburban services.

With regard to revenues, the author cites the very interesting suggestion of Mr. Farrar for issuing track-contracts to select users. The railway it is suggested, should also take upon itself road powers and arrange for goods being delivered at the consignee's door. In passing, the author remarks that all expenditure should be wisely undertaken with the single eye to maximise receipts. Lastly, stress has been rightly laid on the need for a nationalistic policy in freight rates and the view is held that only by nationalising the railways will industrial progress be hastened.

The presentation of the Railway Budget for the year 1940-41 raises very interesting questions about railway policy. The effects of the present war are observable in every sphere of railway

administration and should serve to show how far the anticipations of the author have been justified. Taking the State-owned lines for consideration, we find that there was a net surplus of Rs. 4·3 crores which was contributed to the General revenues. This surplus was above the total expenses including depreciation and interest charges. The surplus was largely due to an increase in goods earnings resulting from an increased flow of traffic and the enhancement of railway freight rates. Though passenger earnings fell from Rs. 30·73 to Rs. 30·47 crores, goods earnings rose from Rs. 68·57 to Rs. 72·56 crores. The earnings from rice, coal and iron and steel traffic have been a record for the decade. Side by side with this, efforts have been made by the railways to increase traffic receipts and many of the improvements recently adopted by the railways are on the lines indicated by the author. These largely consist of more detailed 'job-analysis,' speeding up of trains, intensive use of railway stock, employment of Deisel cars and Sentinel coaches to meet road-motor competition and the giving of greater attention to the comforts and conveniences of passengers and the transporting public.

The year 1940-41 has been a good year for the railways, as the traffic receipts are expected to be Rs. 109·25 crores, *i.e.*, Rs. 11·5 crores above the figures for 1939-40. Needless to say this has been largely due to the increase in freight rates though, in contrast to the previous year, there has been an increase under passenger earnings also. The surplus of Rs. 14·59 crores is a record

for the period, since the separation of the Railway Budget. Referring to this Sir Andrew Clow says, "Our profits are, in a considerable measure, the result of traffic, more or less due directly to the War and thus represent a devastating sacrifice not merely of property but of life and welfare." These increases, it is interesting to note, are due to the general economic conditions that have affected every branch of industry and trade. The expansion in business has been immediately reflected in an increase in coal traffic. Earnings have also been largely augmented owing to the weakening in the competition of coastal shipping and road-motor transport. But the most interesting thing is that, consequent on the increasing cost of motor fuel and accessories and the necessary rise in the operating costs of motor transport, the Railway have no longer felt themselves compelled to lower their rates to meet the road-rates. Especially so is this the case in the Madras Presidency where, owing to the tax on the sale of Petrol, the Madras and Southern Mahratta and the South Indian Railways have withdrawn some of their concessionary rates. In spite of these adventitious circumstances the Railway Member does not seem to view with favour any reduction in the rates and fares now charged. The only hope he holds forth is a 5 per cent. reduction in the surcharge on coal during the months of April to October intended to ease the wagon shortage. Recognising as he does, that his proposals will not be agreeable to Indian industry, he commends them to our acceptance on pragmatic grounds, as "the alternative to an arrangement such as we propose would be an

even heavier burden on the general tax-payer than he must in any case be called upon to bear."

The second part of the book deals with the problem of Motor transport and the merit of the book rests mainly on this. The work undertaken here is new and original and the conclusions deduced therein are bound to be valuable and interesting. For this purpose the author undertook intensive surveys of the transport systems of Travancore and Coimbatore. These surveys were carefully planned and he has been successful in collecting a wealth of information which he has used as the basis of his study. It may be said without exaggeration that few people have undertaken such extensive field investigations. The Travancore system was taken up for study as it affords an excellent example of a State-undertaking. The United Motor Service of Coimbatore was chosen as it represents one of the best-planned systems under private management. This has enabled a comparison between State and private operation of road services and the comparison does much credit to both.

The Travancore survey was undertaken almost immediately after the commencement of the operation of the Service, so that the figures collected refer to a period of six months. The author satisfied himself about everything he observed in every department of the system and learnt the entire procedure followed there. The Audit side of the Transport Department is highly perfected so that the details of procedure had to be carefully studied. With regard to the routes operated, the number on the roads and

the conditions before and after State monopolisation, a little difficulty was encountered in collecting data from the various registers of the Police Department. Sometimes the author found that the figures did not always tally, and thus slight discrepancies were observable. While the fullest and the most accurate data could be had for the State Transport system, similar details about the private undertakings that operate in other parts of Travancore were not available.

The survey of the United Motor Service was also comprehensive, but being a private company run on competitive lines, the financial aspects of its working were not disclosed. This system is one of the very largest in India and operates 47 routes in the districts of Coimbatore, Madura, Trichinopoly, the Nilgiris and South Malabar. It operates both as a co-ordinated service and as a competitive service. On certain sections, especially in the west of Coimbatore it competes with the other road services as well as with the Railway. But elsewhere it is run in co-ordination with the South Indian Railway. There are three important out-agencies at Tirupur, Gobichettipalayam and Darapuram, besides others at Vannathurai, Valparai, Palladam and Satyamangalam. In these areas the United Motor Service is the chief road operator and combines the efficiency and precision of the railways with the flexibility and ease of the road. Dharapuram is the most important out-agency on this service and much valuable information was obtained there.

The author was desirous of conducting a personal survey of the Hyderabad system as it was the pioneer in State monopolisation. It was not possible to do so as the Government of H. E. H. the Nizam sent a few reports stating that all the information could be had therein. The Hyderabad system differs from the Travancore system in so far as it is a monopoly of the road and rail services and covers a larger number of routes. The information gathered has been very valuable and the author has sought to institute a comparison between the Travancore and the Hyderabad systems.

In the chapter on "The Economy of Motor Transport" the author discusses the place of the motor vehicle in transportation and compares it with other means of transport. This study is also sought to serve as an introduction to the problem of motor transport. In doing so, the trade in motor vehicles has been considered. The figures for the foreign trade have been included so as to clarify the position of the various foreign countries in the home market. The general trend, the author notes, has been towards an increase in imports from the United Kingdom. The imports from Britain rose from 3,645 in 1928-29 to 5,119 in 1938-39. In 1934 ten per cent of United Kingdom exports were absorbed in the Indian market. There has been an increasing demand for motor vehicles in this country so that the prospects of starting an indigenous industry are bright. Sir M. Visveswarayya has been expounding the possibilities of such a scheme, but the

unencouraging attitude of Government is a matter for grave concern.

The demand for motor vehicles depends upon a number of factors; ease of operation, low operating costs, the possibilities of working the best-paying routes, and convenience. As has been pointed out, the motor vehicle is increasingly becoming a 'style' product, so that a fleet of motor vans has its own advertisement value. This is specially so in the distributive services. Under the conditions prevalent in India, passenger transport forms the bulk of motor transport. With an increase in its demand and with the general growth of trade there has been a similar increase in the trade in re-sales. Interesting figures relating to this have been given by the author to show the extent of the trade in other countries. The system of instalment purchase has also increased demand by facilitating purchase. In spite of this, the number of cars in India is exceedingly small and the author has worked out the average at 1 in 2,000.

After discussing the place of animal transport, bullock carts and tramways, he sums up the position of the motor vehicle thus: "The motor bus is especially suited for urban transport. Adequate, cheap and efficient transport facilities are an essential requirement of urban life. With the increasing pressure of population in the towns the natural tendency has been for people to spread out into the suburbs. The expansion of suburbs is for the benefit of the people since it brings with it the advantages of

Road-Rail Transport

a healthier life. Living in the country is always a sign of affluence. House rents are lower since land values are less and it would be easier to maintain a larger house than would be possible in the city—but suburbs will grow only if cheap and quick transport facilities are available. The motor vehicle has both these advantages. It is quick, because not much time is lost in taking up passengers or setting them down, and it is cheap since the bulk of expenditure is attributable to the actual working. For rush hour traffic the omnibus is the most suited. The railways by themselves would find the task impossible and the tramways are slow and inflexible.”

While justifying the need for the control of motor transport the author feels that it should be allowed to expand as it is the agent best suited to link the rural parts with the markets. He therefore feels that the abolition of tolls has conferred a great benefit on long distance motor traffic. At the same time he seems to be of the opinion that the bullock carts should make some contribution towards the upkeep of roads. Against this view it may be said that, as the agriculturist is already very much in difficulties, additional levy would cause him greater difficulty. However, the author's contention that, instead of overcrowding a few urban routes, rural services could be popularised through concessions in motor vehicles taxation, should draw the serious attention of all thoughtful students of the subject.

In judging the comparative costs of road and rail transport Mr. Badri Rao has made an elaborate and detailed study of operating costs

in Chapter VIII. He examines the transportation costs one by one before he takes the question of rates and fares. The investigation commences with a study in capital costs. These, he shows, are much less in road-transport than in rail transport. But even here the expenses of a one-man unit differ from those of an organised system. The owner-driver has no expenses to incur, barring the cost of his vehicles. He has no office to maintain nor does he need a workshop. Run on individualistic lines, such operators offer the stiffest competition by working on an uneconomic basis. On a unified system, however, the expenses are bound to be much higher. The capital expenditure of the Travancore system is shown to be Rs. 6,03,688-11-8 and that on the Hyderabad system, Rs. 9.70 lakhs in 1938 alone.

The author then takes up for consideration monthly, weekly and daily expenses of operation. He gives the figures under each head, *viz.*, petrol, oil and grease, tyres and tubes, spare parts and batta and then calculates the expenses per mile on each of these. In doing so he expounds the superiority of a 'per mile' calculation over a 'per cent.' calculation. "There are, in the running of any service, a number of miles that are 'dead,' yielding no return. This might be either due to the fact that there has been some breakdown somewhere, in which case the return haul has to be empty, or that no traffic is offering on the return journey. Apart from dead mileage, deductions have to be made for service mileage—as on trial runs or journeys from and to the garage, etc. It is only when deductions

Road-Rail Transport

have been made on both these counts that the actual paying mileage could be arrived at. In the absence of such exact figures, it would be a fallacy, as is actually done, to credit the total earnings to the total mileage run."

The expenses per mile have been deduced for each item of expenditure. These are found to vary slightly. With regard to fuel consumption, the figure arrived at is 14 or 15 miles per gallon; this, it has been calculated, would work out at about Re. 0-1-6 per mile, *i.e.*, Re. 0-1-5 on the shorter and Re. 0-1-7 on the longer routes. Expenses under oil have been calculated at about 1-2 pies per mile, while tyres and tubes would work out at about 4-5 pies per mile. A similar figure is arrived at in the case of spare parts. Viewing the total operating expenses as a whole, the expenses are shown to be roughly Re. 0-2-9 per running mile. In order to strengthen his conclusions, the author compares his figures with those of Messrs. Gadgil and Gogate.

The expenses of depreciation are next considered with special reference to the Travancore transport system. The depreciation allowed on the rolling stock seems to vary on different undertakings. In Travancore the percentage is at the rate of 25. In this connection the method by which the licensing authorities gauge the life of a bus is referred to. The usual limit is set at four years, though the question of deciding the road-worthiness of a vehicle is left to the discretion of the Transport Boards. Actually the road operators believe that ten years could be taken as a fair average. It is therefore felt that by

prematurely condemning vehicles as unroad-worthy, the transport concerns are put to considerable difficulty in addition to taxation. Taxation of motor vehicles is so heavy to-day that many operators have been swept off the roads. So high is it that in five years' time the amount of taxation would far exceed the original cost of the vehicle. This is so because of a plurality of taxes levied:—motor vehicles taxation, import duties on vehicles, duty on spare parts, tyres and tubes, central duty on petrol and the provincial tax on the retail sale of petrol.

The study of transportation concludes with rates and fares and profits. The basis of charging does not seem to be uniform, being less on short distance-traffic and more on long distance. In Travancore the rate of charge is 8 cash per mile whereas in Hyderabad it is 6 pies per mile in O.S. currency. On the United Motor Service of Coimbatore the short distance charge is roughly about 3 pies per mile and that on long distance traffic 6 pies. The effects of road-motor and inter-motor competition are observed, and the author has shown how in areas almost entirely dependent upon road communications the rates are much more uniform than is the case with areas served by a railway. He has also shown that when an important out-agency town in a road system is linked with a rail-head, the rates taper more towards the rail-head than *vice-versa*. In exemplification of this he has taken a number of routes and studied the rates charged at the intermediary stations and has deduced his conclusions from them. This is the one and only correct way to study the influence

Road-Rail Transport

of competition—competition between places, competition between different means of communication. The adoption of this method in studying railway rates is highly commendable and Mr. Rao is one of the very few people in India who have applied this principle to the conditions of road motor transport. His surveys covered passenger traffic, and he has dealt with the freight side of the question also and has made a comparison between road and rail freight rates. This comparison is much in favour of the road services, for, apart from the lower rates possible in motor transport, the elimination of incidental charges of cartage, handling and packing make road-rates appear more favourable. For a comprehensive and detailed study of this subject, full and accurate statistics are essential. The author complains about the non-observance of the fundamental principle of book-keeping in the case of the smaller units. This evil seems to be persistent, as investigators, both official and non-official, have frequently remarked on the dearth of such information. Nevertheless, if the larger motor concerns and the railways adopt a more charitable view and appreciate these investigations pursued purely out of academic interest, much could be done in judging, with a fair approach to exactness, the sphere of economic influence of either means of transport. Further, it would enable all future legislation affecting either of them being directed along proper lines.

The succeeding four chapters of the book are descriptive and give a bird's-eye-view of the administration and development of the Travancore State Transport Department, the

Hyderabad State Transport system, the United Motors Service of Coimbatore and the London Public Passenger Transport Board. The chapter on the Travancore system is detailed as the author had the opportunity of getting firsthand information on every aspect of administration and control. He starts with a picture of the position of the motor transportation industry in the pre-monopolisation days and shows the number of services operating on the various routes. It would appear that there was acute competition on some of the most paying routes. Such competition does not seem to be altogether absent on those routes which are beyond the sphere of operation of the State monopoly. To portray the present position, he has given a detailed list of the number of routes served and the degree of competition thereon. Considerable work was involved in the collection of these figures, as the ledgers of the Police Department had to be carefully gone through and sometimes the figures in one book did not agree with those of another because of some slight difference in the method of book-keeping.

The position after monopolisation of the eleven main routes reflects much credit on the administration. The net profits for the first six months of operation are seen to be nearly Rs. 61,000. The service now rendered is regular and adequate and the end kept in view has been the provision of enough services to draw all the traffic offering. It is interesting to note that a separate department deals with traffic returns and the daily flows of traffic so as to gauge the

Road-Rail Transport

demand for transport. Apart from the transportation side of the problem, the manner in which all the information is neatly indexed and collected together is praiseworthy. This, however, does not seem to be unique, equally detailed figures being collected together on the United Motors Service of Coimbatore. However, the recent closing down of the statistical branch at Coimbatore is to be regretted.

The three transport systems surveyed are all examples of efficiently run undertakings. The Hyderabad system is a pioneer in the field of road-rail co-ordination. The roads and the railways are administered under the same department, and the total route mileage of the former was 4,069 in 1938-39. There is also considerable freight traffic which accounted for a net earning of Rs. 94,493 in 1938-39. There were twelve out-agencies in 1938-39, which handled a traffic of 30,648 tons. Nevertheless, as in Travancore, the State has not monopolised all the routes, so that there is keen competition on the routes open to private operation and during this year there was a net loss of Rs. 56,756 in operating the road services. In Hyderabad, it will be seen, the Government after monopolisation raised the basis of road-charge to six pies per mile in order to divert traffic to the railways. The end in view has been to make the more profitable routes pay for the less profitable ones.

Whereas Hyderabad and Travancore are examples of State enterprise, the United Motors Service of Coimbatore represents a private commercial body catering to the needs of a large district and connecting it with out lying

districts. The growth of this concern has been phenomenal. The Managing Director of this huge organisation started the concern as an owner-driver. In 1939, the number of vehicles rose to 140 and the total investments exceeded Rs. 10 lakhs. This system was taken up for investigation because it shows that any transport undertaking, whether a State monopoly or a private organisation, can meet our needs if it is run on broad principles of public utility.

The last three chapters of the book deal with the need for and the methodology of control of motor transport. The chapter on the " Organisation of control " is a general treatment of the policy to be adopted, whereas the two succeeding chapters pertain to a study of control as it is exercised in Madras and elsewhere. In the former, a brief sketch of the conditions prevalent in the days of unrestricted competition precedes an enunciation of the principles of control. Arguing the need for control the author says, " The protection and preservation of the high-ways is one of the cardinal duties of a public body and it lies within the power of any State either to allow or to withhold permission to operate on the roads. Using the language of jurisprudence no one can have the ' right ' to make use of the road for transport operation; it is a privilege, and, as privilege is most likely to degenerate into misuse, some sort of check has to be exercised. This can be done by a variety of ways; taxing vehicles, making it obligatory on the part of the transport carriers

Road-Rail Transport

to take out licenses for their vehicles and permits for operating on the highway; placing restrictions on the dimensions of the vehicles and prescribing the maximum weight." Taxation has been accepted as a justifiable method of control but, as the author points out with the aid of facts and figures, taxation in the Province of Madras is exceedingly high. In addition to this, the police regulations are so rigid that one feels that there is too much of road-motor control in this Province.

Licensing of routes is the best way to apportion traffic. Thereby effective check could be placed on the even distribution of traffic, as duplication of services could be obviated and operation of the less paying ones encouraged. "In transport, as in currency," the author says, "the essential validity of Gresham's law is inescapable." The disorganised competitor who is prepared to cut his rates so fine as to drive off his competitors, subsequently thrives upon the wreck of these."

Great care is needed in the exercise of such control. Transport is a public service so that the needs of the public have to be first satisfied. Public need having been established, the next duty of the transport authority should be to safeguard public safety. This is effected by the police restrictions on speed, weight, etc. Thirdly, in the grant of licences, not only has priority of service to be considered but also whether the service rendered has been regular and adequate. The ultimate goal should be the elimination of wasteful competition, for "competition in the provision of services is tolerable only in so far

as it is in the interest of the public.” Within bounds it is quite essential, since its effect would be to provide for better service not only in the motor industry itself, but also as between rival agents of transport. How far these principles are observed in the control of the Motor transport industry in India, and in Madras in particular, has been demonstrated by the author. The study is also partly historical as the development of control has been traced. Its chief virtue lies in the close investigation of the main provisions of the Indian Motor Vehicles Act of 1939, the Madras Motor Vehicles Taxation Act of 1938 and the Motor Regulations of 1940.

The “ Conclusion ” brings together the main points that have been discussed in the text of the book. The author has been repetitionary on occasions and this he has done out of a desire to emphasise his points. In this chapter, however, he does not satisfy himself with a mere summing up of what has already been said, but makes a strong plea for the co-ordination of the road and the rail, and it is therefore a fitting conclusion to the whole book. While appreciating the advantages of statutory co-ordination and monopolisation, he seems to be much in favour of a voluntary basis of co-ordination. Speaking about monopolisation which is so much in the air today, the author tersely remarks, “ In deciding whether a public body should undertake a road-transport service, certain points have to be considered. There is no sanctity attached to public undertakings of such services. The guiding factor in deciding whether or not a public body, say a Municipality, should enter the

Road-Rail Transport

field of private enterprise is that of public need." That a road service would be a financial success if undertaken by that body is not itself sufficient. What should be established is that alone which could offer adequately to the public the service it is in need of. "In certain cases private enterprise would not be forthcoming, as it was in the case of railway construction. But the essential utility of it is so great that the State had to undertake that responsibility either by itself taking it up or by subsidising private concerns. Road transport is not a field wherein there is a dearth of private enterprise, so that a public service would ordinarily be superfluous." A strong plea for a more generous provision of rural services has been put forward and the author aptly concludes thus: "The segregation of the villages is fatal to national economy. They have got to be nursed, revived and made bulwarks of the nation. They have got to be linked up with the main centres of the country and for this what is most needed is a wide and far-flung network of roads so laid as to be entirely complementary to the other modes of transport, especially the railways. India is a land of distances and we cannot well afford to do away with the railways. They must and will continue to be our most important agent of transportation. The road services can only be complementary to them and within their ambit they are *nonpareil*. Thus the crying need in any scheme of transport co-ordination in India is for road re-construction. We want roads, more roads and better roads."

Some of the points raised by Mr. Rao in this book may now be considered. He has rightly

drawn attention to the unhappy state in which municipal and district board roads are being maintained and attributes this largely to a shrinkage in the revenues of these bodies. Much of the wear and tear, he says, is largely due to heavy bullock-cart traffic, and though he sympathises with the agriculturist strictly on grounds of equity, he feels that these also should contribute their mite towards road maintenance. He has in this connection referred to the much-debated question of fitting bullock carts with pneumatic tyres. Needless to say the damage caused by narrow iron-shod wheels would be considerably minimised by the use of pneumatic tyres. The possibilities of such a change are now being investigated by the Indian Road Congress. But a note of warning must be sounded, for as the author points out, the substitution of pneumatic wheels would amount to an indirect form of taxation. The bad state of roads would cause considerable wear and tear to the tyres and as these would have to be periodically renewed the agriculturist would thereby be paying a recurring tax on them. The tax would be indirect in so far as it is an import duty.

The real problem is one of road maintenance and finance. India has a population of nearly 400 millions but it has an extra-municipal mileage of less than 280 lakhs, more than 55 per cent of which is merely earth. No wonder then that the costs of transportation in this country are high. Even the municipal roads are in bad repair and the tendency has been for these bodies to spend less and less money on road maintenance. So chronic has this evil become, especially in the

Presidency of Madras, that the Government have felt constrained to introduce legislation amending the Local Boards and District Municipalities Act so as to make it compulsory on the part of the local bodies, if they fail to do it of their own accord, to spend such amount as may be provided in the budget for the maintenance of roads. In a communiqué issued on the 30th November, 1940, Government of Madras say: "There has been a general tendency recently among district boards and municipal councils to spend an ever-decreasing percentage of their income on road maintenance and more on activities connected with public health, rural uplift, industrial schools and the like. Even the insufficient amount provided by them for roads is often utilised to too large an extent on increasing the road mileage at the expense of the maintenance of existing roads. There has been considerable public criticism by road users regarding the progressive deterioration in the condition of the more important roads in this Province.

It has been found that certain district boards actually spend less than their receipts under the head "Communications," and utilize a portion of the receipts on other services. Some district boards do not spend on trunk and important marketing roads any more even than the minimum required to earn the Government grants fixed for them, though they are expected to spend additional amounts from their own funds on the maintenance of these roads. Many municipal councils spend too little on roads and the important work of providing dustless surfaces in busy built-up areas is progressing very

slowly; there is thus little abatement in the dust-
nuisance caused by fast-moving traffic."

This verily is a grave cause for apprehension and the urgency of the situation is heightened by the Government itself coming to the rescue of the road user. Road motor transportation has been steadily growing from strength to strength, and even the most wary amongst us would concede that it has a great part to play. Even the Hon'ble Member for Railways paid motor transport an indirect compliment during the debate on the dismantling of branch lines when he said that the services provided by it were so effective that the closure of a branch line would not affect the transportation facilities of the areas served thus. Road transport has a great future, as the villages have still to be linked up with the great cities and marketing centres of this vast sub-continent. The following pages, it is hoped, will bear this out and focus attention on the main problems involved in this intricate field of study.

I wish to acknowledge here my thanks to the Syndicate of the Annamalai University and Sir K. V. Reddi Nayudu, Vice-Chancellor of the Annamalai University, for having kindly agreed to my suggestion to publish Mr. Badri Rao's thesis. I may add that the publication of this work had to be undertaken in the absence of the author at Kolhapur, but my task was made easy by the assistance I received from my colleague Mr. C. W. B. Zacharias, M.A.

My thanks are in a large measure due to Sachivottama Sir C. P. Ramaswami Iyer, Dewan

Road-Rail Transport

of Travancore, Mr. G. D. Naidu, Managing Agent of the United Motors Service of Coimbatore and to Mr. H. Rahman, Director of Public Information, Hyderabad. Sir C. P. Ramaswami Iyer's help has been invaluable as he graciously placed all available information at the disposal of Mr. Rao and gave him ample facilities for study. Mr. Naidu was equally kind in giving him details about the administration of his Service. I am grateful to Mr. H. Rahman, for the reports he kindly sent us. I am also thankful to the officers of Messrs. Gordon Woodroffe (Motors) Co., Ltd., Madras. My thanks are also due to the South Indian Railway Company Ltd., and Mr. G. D. Naidu for permission to reproduce their maps in the text of the book.

March, 1941

B. V. NARAYANASWAMY

ANNAMALAINAGAR.



ACKNOWLEDGMENT

THIS book embodies the results of a study I made as a Research student in the Economics Department of the Annamalai University between 1938 and 1940.

The scope of the subject undertaken for investigation is unlimited; and accordingly I have made no attempt to make it exhaustive. I have in the following pages presented but some of the more important problems of Road-Rail Transport in the hope of stimulating further research.

I am indebted to the authorities of the Annamalai University for enabling me to make this study.

To my professor, Dr. B. V. Narayanaswami Naidu, who gave me valuable guidance at every stage of the work and unstinting help in the collection and collation of the material of this book, I am deeply grateful. I am also highly obliged to him for his kindness in undertaking the onerous task of seeing the book through the press. It will not be too much for me to say that, but for his influence, I should have found it difficult to obtain the facilities for direct investigation in Travancore and Coimbatore.

Though the impress of my professor's influence may be seen in every part of the study, the opinions I have ventured to express are entirely my own.

I am thankful to S. Raghavendra Rao, S. Thiruvengadathan, B.A. (HONS.), K. A. Kunhu Kutty, B.A. (HONS.), and C. S. Krishnamurthi, B.A., for the ready help they gave me in many directions and to Mr. T. K. Venkataraman, B.A. (HONS.) for preparing the index.

March, 1941.

S. R. N. BADRI RAO.

PART I

CHAPTER I

GENERAL SURVEY

WE are all living in a highly mechanised age characterised by great industrial activity. The element of time, always important, has come to play an extraordinary part in our every day life, and restless man is untiring in his efforts to subordinate Nature to his own dictates and to serve his needs. The history of our development has been slow but, none the less, spectacular. The sedentary pursuits of the Mediaeval Ages when our forefathers were content to stay at home, and a journey to an adjoining village or town had to be planned days and, probably, months before, seem almost barbaric by comparison. Yet, it must be remembered that hardly two centuries ago such was our predicament. Two centuries have passed by—two centuries of experiment and innovation, two centuries of progress and prosperity, two centuries of peace and turmoil—and the scene that greets the eye today could well create consternation in the breast of any of our forefathers. But, what is it that has wrought all this change? What marvel has annihilated time and distance? The answer is obvious—economic development for which transportation has been so much responsible.

Value in use and value in exchange are two notions that need no explanation. There are places where an abundance of a particular commodity renders it low in value; in others, there may be a scarcity so that if it could be carried from the former to the latter there would be a net accretion in value which would represent an increase in national wealth. Marketing creates and enhances utilities of time, place and exchange. It is the ground-work of trade. Each nation would specialise in the production of just those things for which it is specially adapted, and

Road-Rail Transport

means of transport—an anachronism in an age of speed. Being artificial, railways could be built and laid anywhere and are probably the only means of improving countries economically backward. Canada, Australia and India owe their position in a large measure to railway development. Next to a tariff wall, a favourable freight structure is the most important means of improving trade. In the early history of South Africa, irrigation and railway development proceeded simultaneously. In this, the railways were of great help in transporting the machinery needed for carrying out irrigation works. Indian conditions before and after the introduction of railways are an excellent proof of this. Besides, being best suited for the carriage of goods-traffic over great distances, railways can, by a policy of favourable rates, lead to the rapid industrialisation of the country. The Indian Industrial and Fiscal Commissions stressed this point in particular and called for a more equitable rate policy.² The railways can do this only by making a dispassionate study of the financial possibilities of each industry and, whenever it feels that a particular one is very promising, it can and should in the early stages, foster its growth even at the cost of quoting rates that merely cover prime costs. After the industry has developed, the railway could raise rates and compensate for its early sacrifices. By aiding industries in the choice of industrial sites, helping them with the construction of railway sidings and warehouses, by facilitating shipments by the use of containers, by introducing a rebate system whereunder preferential treatment is offered to regular customers, and by quoting special and concessionary rates, railways can, if they wish, bring about a great improvement in industry and trade. Nor do such measures savour merely of philanthropy. It would be in the interests of the railways themselves to do so; for prosperous business conditions bring them

2 *Vide* Indian Fiscal Commission Report.

increased revenues. The brisker the trade, the greater the railway revenues, and the larger the revenues, the more easy would it be to provide greater facilities. So great are its possibilities that even in those gloomy days of the last century when slowly and timidly the railways were introduced and people were rather sceptical about them, the shrewd Duke of Bridgewater could foresee their growth. When some one said to him "You must be making handsomely, out of your canals?" he replied "oh yes, they will probably last my time, but I don't like the look of these tramroads, there's mischief in them."³

The development of road communications has aided in this work of national revival. The railways by themselves cannot go everywhere. A well planned road system has to supplement them and to feed them with that traffic which is very essential for their successful operation. A new road by linking the village to the town and the town to the rail-heads opens out and extends the scope for marketing. The first effect is to be seen on the immediate rise in house and land values in the area served. When in addition, a water supply and drainage scheme together with an electric system are introduced, the increase in value is augmented all the more. In countries where the influence of politics has been corrupt, as in South Africa, railways have been built for no other purpose than to enhance land values!⁴ The banalities of misdirected railway policy are all too obvious.

With increased ease of urban transport, the tendency has always been to expand outwards. This is specially noticeable in the case of large metropolitan cities where congestion is very great. The opening up of an electric suburban service, as in Madras, at once results in the rapid rise in suburban areas. The rigidity of high rents in the

³ Ways and Works in India: MacGeorge, p. 226.

⁴ The Railway Policy of South Africa: Frankel, p. 118.

Road-Rail Transport

heart of the towns is at once broken and, not only is there a redistribution of land values but also, a marked improvement in the health and sanitation of the city. Expansion always proceeds along the routes where transportation facilities are available. The reasons for this are obvious. It brings the worker within a few minutes run of the city. In this the road vehicle has the biggest role to play. Urban motor transport is about the cheapest means of locomotion and, has besides, the great advantage of speed and flexibility. How many of us think of Daimler and Benz who invented the motor vehicle?—about as many who remember Stephenson when they travel on a train! Nor is the middle class citizen alone who benefits by such expansion. Country or suburban life has its own attractions to the opulent. These would prefer the aristocracy of the private car.⁵ The advantages of large residences and a big establishment need no mention.

Apart from these concrete benefits rendered by transportation facilities, the immaterial gains are far greater. It has resulted in active intercourse between the villager and the townsman, the national and the foreigner. All commingling of people, all clashing of opinion is necessary for a healthy toning of social life. We can no longer afford to be Robinson Crusoes marooned on a lone, lorn island, cut away from the outside world. The annihilation of distance has facilitated trade and travel. Travel broadens our outlook and enlarges our intellectual horizon. Narrow parochialism gives place to good humoured urbanity. Still, strange to recount, it is within the memory of many of us, how one who had crossed the high seas and returned socially and intellectually enriched was made the “pariah” of society and was allowed to enter the Hindu fold only after the “prayaschit” or purification ceremony. Today with the development of air and sea travel the early horrors of voyage have disappeared

5 The Railway Policy of South Africa: Frankel.

and the impact of the West on the East has wrought changes beside which the philosopher's stone pales into insignificance. All the health and intellectual vigour, all the sobriety and wisdom, all the broad-mindedness and bonhomie that pervade Universities and other social and intellectual centres are the product of this fusion of continents. There has been, in addition, a political awakening and a feeling of unity as a result of the overcoming of provincial barriers. In short, so great have been the benefits conferred by a rapid growth of transportation and communications that no calculus can adequately integrate them.

Chronologically, as between the railways and the roads, the latter were the first to make their appearance. India has been famous for her knowledge of road engineering since very early days. The recent archaeological discoveries at Harappa throw much light on our early road system. It is the unanimous opinion of all that we had achieved such perfection in our town planning that the city was well laid out with broad roads adequately provided with side drains and sinks to carry away the refuse water from the roads.⁶ The strange discovery of a copper-modelled miniature cart is supposed to be the earliest representative of a wheeled vehicle. Thereafter, there is a black spectrum in the historical annals of India until we come to the Mauryan period. The "Indica" of Megasthenes and the "Arthashastra" of Kautilya are overflowing with details of these. That doyen of Indian administrators in his treatise gives specifications of the width of roads and details for their upkeep. According to him, the broadest roads had to be twentyfour feet in width, as also country roads. The "Sukraniti" also gives a wealth of information on road engineering. Under Chandragupta Maurya⁷ there

6 *Vide* Cambridge History of India by Dodwell.

7 *Vide* Mauryan Policy by Dikshitar.

Road-Rail Transport

was a regular department of communications which looked to the proper maintenance of roads. The Great Mauryan, Asoka, decreed the laying out of convenient roads well provided with avenues of trees and rest houses where all facilities were available to the travellers. Ibn Batuta gives an excellent account of the state of roads and communications in the fourteenth century. And thus through the centuries each monarch in his own time tried to improve upon his predecessor either out of a genuine public spiritedness or the vanity of human wishes. Sher Shah, Akbar and Aurangzeb, wise and farseeing statesmen as they were, undertook grand projects of road-making spanning the whole country and linking up the out-lying provinces with the imperial capital. Nor was the South any the least backward. The Rajas of Vijayanagar, the Cheras, Cholas and the Pandyas were all great builders as the Chronicles of Nuniz and Paes, Hinen Tsang and Marco Polo and a host of other foreign and Indian travellers show.

However, it is with the advent of British rule in India that there has been a well planned system of roads and organisation in control. But it took some time even for the British to inaugurate their scheme of road building. As MacGeorge says, it is not easy to account for this extreme backwardness even after the advent of British rule. "Beyond 20 miles from Calcutta the roads communicating with the principal stations of the Upper provinces were in no better state than in the time of the Moghuls!" It would appear that when Monstuart Elphinstone proposed road construction in this Presidency, a member of the council wrote home saying that "The silly young nobleman actually talks of making roads."⁸ In the beginning, convict labour was mostly employed and the expenses were met out of the ferry funds. In the early days of British rule in India when the fears of

8 Ways and Works in India: MacGeorge, p. 72.

the Afghan menace and of a probable national revival were not entirely absent from the breast of our administrators, the military needs of the State were kept foremost in the making of road policy. Their military character was obvious from the fact that the maintenance and construction of roads were under the supervision of Military Engineers; and a number of trunk roads were constructed connecting important commercial and military centres. A change in policy was inaugurated in the regimes of Lord William Bentinck and Lord Dalhousie, when the Military Board was superseded by the Public Works Department. As Smith says, "A particularly inefficient body called the Military Board, which was supposed to look after public works, was suppressed and the Department of Public Works (P. W. D.) was constituted nearly in its existing form. The expenditure on public works which had been on the most niggardly scale was enormously increased and works of great magnitude such as the Grand Trunk Road were undertaken."⁹ Today, we are fairly well provided with a good road system. There are four great systems *viz.* the Grand Trunk Road extending from Calcutta to the Khyber, the Madras—Calcutta, Madras—Bombay and the Bombay—Delhi roads. These four by themselves account for nearly 5,000 miles. The Presidency of Madras is the best served area whereas the arid tracts of Rajputana, Sind and the Punjab are the poorest.

Now in India there exist 82,284 miles of metalled roads and 224,433 miles of unmetalled roads. These consist of roads maintained by the Public Works Department, roads maintained by Municipalities and Local and District Boards. Figures for these alone are given in the Statistical Abstract for British India. In 1935, the lengths of roads maintained by the P. W. D. were 30,679, metalled, and 17,450, unmetalled. The Municipalities' share were 11,677 and 8,965 and that of the District Boards 39,928 and

⁹ Oxford History of India, p. 707.

Road-Rail Transport

198,018. It will thus be seen that the District Boards have the largest length of roads to maintain, and the length of these has been annually increasing as the following figures show (in hundreds)¹⁰

\	P.W.D.		Municipalities &c.		District & Local Boards	
	M.	U.	M.	U.	M.	U.
27-28	23.4	23.7	7.3	5.7	30.3	114.7
29-30	24.8	23.8	10.0	7.2	35.9	152.4
31-32	27.6	21.0	9.5	6.9	37.4	162.0
33-34	27.9	20.2	10.3	6.9	37.8	165.7
35-36	30.7	17.4	11.7	8.9	39.9	198.0

M: Metalled and U: Unmetalled.

Besides these, there are roads maintained by the village panchayats and by the villagers themselves.

In the Madras Presidency, with which we are here concerned, in 1936, there were 32,627 miles of all roads of which the total length of motorable roads was 23,091 miles and 19,719 of metalled. Putting it in another way, the area per mile of all roads was 4.41 square miles; for motorable roads 6.16, and for metalled roads 7.21 square miles. Against these, the total length of railway mileage is 4,625 representing 30.92 square miles per mile of railway. It will be obvious from these few figures that the Presidency depends mainly upon the roads for means of communication as nearly 50.3 per cent of the total area is more than 10 miles from any railway.¹¹ The road map of the routes served by the United Motors and the Railway map of the S. I. R. appended at the end of the book make clear the relative importance of these two means of communications.

¹⁰ Statistical Abstract for India 1935-36.

¹¹ Vipan Report on Road Development in the Madras Presidency, p. 7.

The administration of roads in India is a Provincial subject; but, the Governor-General in Council may, if he thinks so, declare any road to be of military importance and prescribe conditions as to its construction and maintenance. Provincial roads are financed out of the Provincial revenues and are maintained under the supervision of the Public Works Department. But, as in Madras, a large number of them are maintained by the District Boards. It is not always that expenditure could be met entirely out of revenue, because of the huge costs of construction and maintenance. As a consequence, the Provinces have got to finance them out of loans. In 1928-29 in Madras, the total expenditure amounted to Rs. 150·7 lakhs all of which was financed out of revenue. Of these, Rs. 20·07 lakhs were from provincial and Rs. 130·63 lakhs from local revenues. In this particular year, however, a loan of Rs. 4·15 lakhs was raised by the Local Governments on original works. In 1930-31 the combined expenditure from revenue, both Provincial and Local, amounted to Rs. 231·45 lakhs; and in 1933-34 to Rs. 127·45 lakhs. The fall in expenditure has been due to the attenuated revenues owing to the ill effects of the depression. The major expenditure is from Local revenues, and in 1930-31 it amounted to Rs. 202·56 lakhs as against Rs. 28·89 out of the Provincial Revenues.

The Central Government grants loans from the Road Development Fund for purposes of improvement. This Central Road Fund is constituted out of the proceeds of the tax levied on petrol which is now ten annas per gallon (Central duty). The proceeds from the duty levied on the imports of motor spirit amounted to Rs. 462·82 lakhs in 1937 and to Rs. 510 lakhs (revised figures) in 1938. The budget estimate for 1939-40 is Rs. 542 lakhs. This apart, the revenue derived from the Central Excise duty on motor spirit was Rs. 136·32 lakhs in 1937-38 and Rs. 115·00 in 1938-39. Out of this fund, grants are made

Road-Rail Transport

to the various provinces on the basis of the petrol consumed. The grant is expected to be in addition to the provincial expenditure on roads met out of general revenues. The condition of the grant is that it shall be used only on construction, reconstruction or substantial improvements of roads and bridges and not upon road maintenance and renewal. It may, however, be used for making interest payments on funds borrowed for road construction or towards the amortisation of road loans. The expenditure on the administration of the Provincial Boards of Communication could be met out of these. Though originally meant to supplement expenditure, now, owing to lean financial years, the provinces entirely depend upon them for road finance. The Gross Receipts of the Road Fund till September 1937 were Rs. 1,038.02 lakhs out of which the Civil Aviation grant was Rs. 5.52 lakhs leaving a net receipt of Rs. 1,032.50 lakhs. The net sum available for distribution was Rs. 861.26 lakhs, and the amount actually distributed was Rs. 610.30 lakhs leaving a balance on hand of Rs. 141.50 lakhs. The Jayakar Committee on Road Development in recommending such a procedure said "This annual grant should be credited to a separate road development account, and it should be arranged that unexpended balances should not lapse at the end of the financial year, but should be carried over or re-voted for expenditure in the following year."¹² The Standing Finance Sub-Committee of Roads is the authority that exercises control over the expenditure of the grant. While the Central Government grants loans to the provinces, the provinces, in their turn, make grants to the District Boards. In 1933-34, the Province of Madras granted 36.34 lakhs of rupees to the districts in the province, and of this, the largest share of Rs. 2.53 lakhs was for Malabar; Chingleput came second with Rs. 2.15 lakhs and Coimbatore third with Rs. 2.10 lakhs.

¹² Jayakar Committee on Road Development, p. 40.

In this Province, roads are divided into four classes. Class 1 or trunk roads are maintained at the expense of the District Boards or Municipal Councils, except for a short mileage of important routes that are maintained by the Public Works Department. The Government makes a grant for the maintenance of these roads upon the certification of the Superintending Engineers of the P.W.D. that the expenditure has been incurred and that their conditions justify it. In respect of the second class roads which are motorable and are either metalled or are gravel-surfaced, a fixed grant is made for their maintenance. For these too, certification is necessary, and the Collector of the District is the authority that has to do the certification. The third class roads are maintained entirely by the District Boards. The fourth class roads are village roads for the maintenance of which the Panchayat Boards are responsible. Prior to the abolition of Taluk Boards, these had their own share of roads to maintain.

Apart from these, the P.W.D. maintains considerable lengths of roads consisting of canal bank or river bank roads, ghat roads and roads in certain agency tracts such as those in the Vizagapatam and Godavari Districts. Finally, the Forest Department has about four thousand miles of roads to maintain. Thus the Madras Presidency has the greatest length of roads in the whole of India both with regard to the total length and the area served. With the constitution of the Central Road Fund in 1929-30, the Madras Government decided to sanction a full grant for expenditure on trunk roads and a half grant in respect of other roads. On the abolition of tolls consequent on the passing of the Motor Vehicles Taxation Act of 1931, the District Bodies found it impossible to maintain the other roads up to the standard required and, in consequence, the half grant was not availed of. The trunk roads alone could be maintained, but these, unfortunately,

Road-Rail Transport

run mostly parallel to the railways so that there is a lack of balance in the road system. The Jayakar Committee had called for an extension and development of the road system and the construction of village roads linking up the villages with the main roads and with each other. But now, because of the impecuniosity of the District Boards, it has not been possible even to maintain the roads already in existence.

Normally, roads are financed out of the general revenues ; but, with the increasing cost of maintenance due to the, development of the motor transport industry, additional taxation has been resorted to. These are of five sorts—central duties on motor cars, cycles and parts, duties on omnibuses, vans and parts, pneumatic tyres and tubes, petrol and motor vehicles taxation. In 1937 the receipts from the first two (in lakhs) were Rs. 168·11; from tyres and tubes they were Rs. 39·92; and from Motor spirit Rs. 462·82. The Central Government receipts from taxation on Motor Vehicles were Rs. 3·30 lakhs.

The Provincial sources of revenue are tolls, vehicle taxes and petrol tax. Till 1931 the system of tolls was in existence in this Province. But the passing of the Motor Vehicles Taxation Act of that year did away with the system, thereby inflicting a loss of 25 to 30 lakhs of rupees. Other sources of revenue were licence fees for buses and lorries and municipal taxes on private cars. The new Act of 1931 resulted in dual taxation both by the province and the local boards so much so, the average tax levied by the local bodies in this Presidency amounted to Rs. 1,130 for a 23 seater bus in addition to Rs. 690 levied under the Provincial tax. So heavy was the taxation that large numbers of buses were driven off the road. In 1938 a new Motor Vehicles Taxation Act did away with this duality in taxation and introduced a new schedule of rates incorporating a single provincial tax on motor

vehicles. The District Boards and other local bodies were reimbursed for their loss of revenues under these heads with sums equal to their average annual receipts during the three years preceding the promulgation of the law. The petrol duty of $1\frac{1}{2}$ annas on the retail sale of petrol introduced in this Province in 1938 is an additional source of revenue. The effect of these measures has been to seriously starve the local bodies of much needed funds for the upkeep of the roads. The abolition of tolls had the unfortunate effect of depriving them of an important source of revenue which in 1926 brought in eleven lakhs of rupees to the local bodies. In 1938 under the Congress Ministry, however, an amendment of the Indian Tolls Act of 1851 and the Madras Motor Vehicles Taxation Act of 1931 was effected. In virtue of Section 14 of the latter, a toll could be levied only in respect of roads and bridges constructed or repaired at the expense of the Provincial Government. Where a local body did so with the aid of a loan or grant from the Government, it was denied the power to levy a toll. The amendment rectified this anomaly and sought to empower the Provincial Government to levy a toll even when the works were financed either partly or wholly at the expense of the local body. The proceeds of such levy were to be utilised to recoup the expenditure so incurred. The New Act, by rendering the Local bodies powerless to tax vehicles on their own, the receipts have fallen down. Of course, they are being compensated for this loss, but as the grant is on the basis of their original receipts, any additional revenues that could have been subsequently got through development of motor transport in the district has been denied them. The position has been ably summed up by the Mitchell-Kirkness Report as follows:—

“ The reduction in the income of District Boards by loss of toll revenues which dates from the year 1931-32, has already, we understand, led to enforced neglect of roads, to rapid deterioration and to the accumulation

Road-Rail Transport

of arrears of maintenance and renewal which will ultimately be more costly to repair than if taken in hand in due time. The greatest present need is, therefore, the provision of adequate funds to maintain the existing road system, and further, while at the level of cost at which metalled roads in the province have generally been maintained in the past, it seems that for the general case, no surface treatment with tar or bitumen could be justified upon the grounds of economy; nevertheless, such an improvement is very desirable..... The position thus is that before any great move forward can be made, the existing provision for maintenance must be increased and a considerable mileage must be rendered less dusty.”¹³

The crying need is therefore for an increase in expenditure on roads so as to provide the road users with a good means of communication. The importance of this can hardly be over emphasised, and especially after the rapid development of road motor transport in India, the need for this is specially great. In 1927, at a meeting of the Council of State, a resolution was passed recommending to the Government the appointment of a Committee “to examine the desirability of developing the road system of India, the means by which such schemes could be most suitably financed and to consider the formation of a Central Board for the purpose of advising in regard to, and co-ordinating the policy in respect of, road development.” The Jayakar Committee was thereupon appointed to go into the question. In its view, there was great need for the improvement of provincial and village roads so as to be commensurate with the demands made by road traffic upon them. It, therefore, recommended to the Central Government to make liberal grants to the provinces for road construction. “Strictly speaking,” they said, “it might perhaps be correct to confine expenditure from Central revenues to projects which may fairly be regarded as benefitting India as a whole, or as aiding the proper administration of a

13 Mitchell-Kirkness Report.

Central subject. And ultimately it may be found desirable to restrict grants to roads classed as arterial or to roads for instance, which are definitely feeders to railways. But until the road system of India takes firmer shape, considerable latitude will probably be found necessary.”¹⁴ The grant was to be made from the receipts from additional petrol duties which was to be credited to a separate Road Development Fund. The basis of the grant was that 15% of these should be retained by the Centre for reserve purposes, and out of the remainder, each Province was to receive in proportion to its petrol consumption.

As to the method of finance, they suggested as an additional source of taxation an increased duty on motor spirit, vehicle taxation and licence fees for vehicles plying for hire. They therefore felt that an additional duty of 2 annas could be levied on petrol for road development purposes. The Committee, however, was timorous in its suggestion of roads being financed out of loans. “We would, however,” they said, “deprecate large schemes of road expansion financed by loans for the service of which provincial revenues might be mortgaged for long periods, while other departments of Government which may be no less important are starved.”¹⁵ They felt that such a procedure could be followed only in the case of construction or reconstruction of roads and, preferably, for the building of such permanent structures as bridges, etc. As a means of financing these schemes, the Provinces were empowered to increase their taxation on motor vehicles, but the Committee wisely suggested that this should be provincial instead of local, and that the local bodies could be compensated for their loss from local imposts and by grants from the Province.¹⁶

¹⁴ Jayakar Committee Report, p. 43.

¹⁵ Jayakar Committee Report, p. 46.

¹⁶ *Ibid.*

Road-Rail Transport

We had occasion to mention that recent developments in road maintenance and finance have not been satisfactory. The condition of the highways calls for urgent reform. The onus of doing this lies on the Governments concerned. The Mitchell-Kirkness Committee categorically asserted that there was a grave lack of balance in the road system, the tendency being to concentrate attention on the trunk roads leaving the local roads in bad disrepair.¹⁷ The cause for this has been already given, *viz.*, the insufficiency of local revenue to meet expenditure consequent on the abolition of tolls and local motor taxation. Whereas, on the one hand, poor finance has been responsible for bad maintenance, increased motor transport, on the other, contributes heavily to the depreciation of these roads. This problem has become acutely grave in recent years because, for the most part, the roads are maintained by local bodies. Under such circumstances, the Government of Madras appointed Mr. A. Vipan as the Special Road Engineer to investigate into this question and to suggest ways and means of development. The first suggestion that he made was that there was great need for co-ordination in the inter-district roads. It was largely due to the fact that roads in which one district had particular interest were not necessarily of importance to the adjoining ones so that, while one section of the road was well maintained, another was left in disrepair. The estimated cost of such co-ordination of the inter-district roads was Rs. 36.82 lakhs. The cost of the major bridge projects was estimated at another 105.85 lakhs of rupees. The district road schemes themselves account for Rs. 432.9 lakhs because of the large number of roads that have got to be constructed. To facilitate railway transport a number of feeder roads have been found essential. The total length of such roads amounts to 367 miles and 6 furlongs, of which the largest share is that of the M. & S. M.

¹⁷ Mitchell-Kirkness Report, p. 7.

Railway. The entire length of roads required by this Railway is 296 miles which would cost nearly Rs. 16·53 lakhs. On the South Indian Railway, the length of such roads is only 25 miles costing about Rs. 2·18 lakhs. The Bengal Nagpur Railway which serves the northern part of the Presidency is in need of 46 miles which would cost Rs. 3·23 lakhs.

Generally speaking, therefore, this Presidency is well served with roads and has the highest total for the whole of India. Most of the stations that require connexion with the road system are located in areas already very well provided with roads on which transport is mainly by bullock carts. Apart from these, there is great need for the development of marketing roads. The additional recurring charges on account of annual maintenance in conjunction with trunk roads would, the Engineer anticipates, be Rs. 14·28 lakhs. In short, the entire cost of road development as suggested by the Special Officer is expected to be Rs. 611·15 lakhs and the actual cost of maintenance alone is expected to come to Rs. 23 lakhs per annum. Needless to say, the scheme is very ambitious and would necessitate huge expenditure for the finance of which revenue alone cannot be relied upon. The need is so urgent and the economic possibilities so great that it has got to be undertaken. It can hardly be emphasised too much that the agriculturist's weak staying power is essentially due to his inability to find good markets. Perennially in want and crushed by heavy debts, he cannot afford to wait until a more propitious time to effect the sale of his produce, so that the crop is sold as soon as it is harvested.¹⁸ More often, since loans are raised on the hypothecation of the standing crop, he has absolutely no control over its sale. Whether it is he who sells the produce or his creditor is immaterial. In any event, both would need good roads to enable

18 *Vide* Central Banking Enquiry Committee Report.

Road-Rail Transport

them to market their produce either by road or to carry it to the rail-head. The need for constructing and planning new roads so as to give access to the interior to tap the rural parts is all the greater if the present motor competition with the railways is to be eased. More than anything else, steps should be taken to improve the wearing qualities of the road and to introduce a new type of cheap road that would adequately meet the demands made by modern traffic on them. An unfortunate and misdirected political outlook views the taxation of the bullock cart as unjust. True, their ability to be taxed is low, but, since they also use the road, they should contribute towards road maintenance. In fact, it is they that play the worst havoc. Shod with narrow tyres, they cause considerable damage to the roads. This is estimated at Rs. 228 per cart per year.¹⁹ There are now about nine million bullock carts in India so that the extent of the expenditure necessitated by them is easily imaginable. Broadening the width of the tyre is impracticable because the traction power will have to be great. Pneumatic tyres are an alternative. Recent researches conducted at Pusa indicate that there is nearly a 300 per cent increase in the load capacity and 75% decrease in cost per ton in the case of a pneumatic tyred cart over an ordinary solid tyred vehicle. The average rate per mile is only about 1.5 pies per mile. The bullock cart is an integral part of our economy and must be preserved at any cost. Compulsory use of pneumatic tyres would inflict prohibitive costs on the owner and shift the tax on tyres to the agriculturist. Researches in road-making are being conducted and a "Test Track" has been experimented with at Delhi. The possibilities of this "test track" were expounded by Mr. Meares who believed that this resulted in a saving equal to ten times the sum that would be necessary to expend on it. In evolving such a new

19 Road Development in the Madras Presidency, p. 209.

surfaced road, the financial implications of the scheme have to be considered, and should be such as to provide for the amortisation of the loan, interest thereon and the maintenance cost. Due regard should be paid to the dust problem and the wearing qualities of the road. The Special Road Engineer estimated the total cost of cement-concreting the nine thousand and odd miles of trunk and marketing roads of this Presidency at 30 crores and, in view of the niggardliness of the funds allowed by the Provincial Government to the local bodies in respect of the roads—Rs. 570 to Rs. 675 per mile in the case of District Boards and Rs. 1,000 per mile for those portions within municipal limits—he was of the firm conviction that, financially, the incurring of such costs was not justified.²⁰ Therefore, some cheaper substitute has to be found as the field for technical research in this direction is almost unlimited.

While the primacy of the roads as a means of communication cannot be disputed, the importance of the railways in our economy is inescapable. The history of Indian Railways is the history of India in modern times. They have been one of the greatest factors responsible for the welding of India into a nation. The roads by themselves cannot serve any great purpose unless means of conveyance are invented so as to make speed possible. Till the beginning of this century there was a conspicuous absence of such vehicles, so that the lethargic pack-horse and the bullock cart were our only means of transport. Naturally, the railways monopolised passenger and goods traffic because of their superior position as purveyors of transport service. The advent of the steam Leviathan marks a new era in our economic life. The iron roads opened out markets hitherto unknown and by overcoming Nature's obstinacy have expedited locomotion. The agriculturist and the trader need no longer despair of vending

20 Road Development in the Madras Presidency, p. 209.

Road-Rail Transport

their produce; on the other hand they have to keep pace with the railway and to harness it into service. So obvious have been its invaluable benefits conferred upon us that it is with a twinge of remorse and repugnance that we read that, at the time of the Great Mutiny, the railway and the telegraph were condemned as heathenising influences intended for the political subjugation of this country.

The growth of Indian railways forms one of the most brilliant chapters in the cavalcade of history. The difficult nature of the country traversed and the overflowing rivers and torrents that had to be bridged made railway engineering extremely difficult and hazardous. The early difficulties that beset the railway engineers are easily imagined. The problem of surmounting the Western Ghats in laying the line between Bombay and Nagpur alone taxed the genius of our pioneers. The construction of the Margaret Louise Bridge in the Chapper Rift on the North Western Railway is by itself an achievement of the greatest magnitude. Examples could be multiplied, but this is enough to show how difficult the task was.

The development of Indian railway policy has been shiftty, and in the early stages there was much muddle-headedness. It is not our purpose here to go into the intricate details of historical development. Suffice it to take in a broad glance of the picture. In the beginnnig, since the country was undeveloped and the financial prospects of railway construction were not certain, it was felt that Indian capital would not be forthcoming in large amounts to finance the scheme. So, foreign capital was resorted to; and, as this also needed some attraction, the East India Company made a free grant of the land for track-laying and other buildings and besides this, a minimum guarantee of 5 per cent on the capital was offered, the stipulation being that any surplus over this was to be equally shared between the railways and the

East India Company. The first proposals were submitted in 1844 for the construction of experimental lines between Calcutta and Rajmahal by the East Indian Railway and between Bombay to Kalyan by the G. I. P. Railway. The first section of the G. I. P. Railway between Bombay and Thana was opened on April 18, 1853. The Governor at that time did not think the occasion sufficiently important to necessitate his presence and so his A. D. C. deputed for him! It was only with 1853 that the policy of leaving construction to private companies was adopted. Lord Dalhousie believed that though the State Engineers could do as well, the exigencies of the State could not permit of their being withdrawn from their normal duties. A similar section of the line between Madras and Arkonam of 39 miles was entrusted to the Madras Railway Co. for construction. Under all the terms of agreement the condition was that the State could take over the lines after 25 years, during which time it was entitled to exercise control over their construction and operation. The exchange adopted was the 22 $\frac{1}{2}$ ratio so as to make for fixity in the sum guaranteed. These privileges were very liberal because of the shyness of capital and the probable risks entailed.

The question whether the State or private management should undertake further construction had to be gone into. In fact, because of the costliness of guarantee and the criticism of people like Thornton that English capital was only waiting to find profitable avenues of absorption in India,²¹ the State undertook to invite funds without guarantee. Accordingly, in 1862 a subsidy was granted to the Indian Branch Railway Co. to lay feeder lines in North India. The subsidy was at the rate of £100 per mile for 20 years, besides an additional grant for bridges costing over £10,000. The Indian Tramway Company made a short line in Madras. But these ventures were doomed

21 *Vide* R. C. Dutt: *India in the Victorian Age*, p. 354.

Road-Rail Transport

to early failure and had to be absorbed into the Oudh and Rohilkhund and Carnatic Railway Companies respectively. This policy having failed, the question whether the state should undertake construction became a topic of burning importance. Sir John Lawrence summed up the situation thus: "The Government of India has for several years been striving to induce capitalists to undertake the construction of railways in India at their own risk, and on their responsibility. But the attempt has entirely failed, and it has become obvious that no capital can be obtained for such undertakings otherwise than under a guarantee of interest fully equal to that which the Government would have to pay if borrowed directly on its own account." ²²

The defects of the guarantee system soon became obvious. The Companies were assured of a handsome return so that the urge for economy was not felt. The control exercised by the Government was general, and the only incentive to economy was the probable share in the surplus. Lord Canning felt that the guarantee system would run the Government into unprofitable risks without commensurate gains. Moreover, the financial straits into which the Government were put consequent on the outbreak of the Mutiny called for economy. The military needs of the state also became more obvious so that the Government switched on to the policy of State construction and maintenance. The muddle-headedness of policy is seen from the fact that metre gauge lines had to be converted into broad gauge for purposes of defence. Needless to say, the expenses incurred were very great. Even the slight modifications adopted in the guarantee system did not prove effective so that the state thought it best to directly undertake the expenditure of additional capital, and accordingly, no new contracts were entered

²² *Vide History of Indian Railways. Government Report, 1914-15.*

into. By the close of the first quarter century of railways, 6,128 miles of line at a cost of nearly £99 millions had been constructed by companies, and the state had built 2,175 miles at an expense of nearly £23½ millions.

The outbreak of famine and the report of the Commissioners in 1880 mark a new epoch in railway history. The Commissioners felt that India needed at least 20,000 miles of railway to inoculate her against the scourge of famine and recommended that 5,000 miles in the first instance were very essential. The Commissioners held the view that construction under private enterprise was desirable. To quote them, "There would be manifest advantages in giving free scope to the extension of railways by private enterprise if it were possible; and though the original form of guarantee has been condemned, it may not be impossible to find some substitute which shall be free from its defects and may secure the investment of capital in those undertakings without involving the Government in financial or other liabilities of an objectionable nature." ²³

The financial quagmire into which the State had landed, coupled with the excessive administrative expenditure entailed in construction, put state construction out of favour. It was feared that politics would corrupt policy and that the State could not work the lines as economically with a single eye to profit as the private companies. In undertaking the Frontier Railway policy, the Government had burnt their fingers, and experience taught them that private undertakings alone could work the lines profitably. But the field was no longer virgin as the most productive areas had been tapped. It was therefore felt that if, as it was imperative, there had to be a revival of companies, some modified form of guarantee was essential. In 1880 the Government realised that it could allow the construction of light railways on the financial responsibility of

²³ Famine Commission Report 1880, p. 170,

Road-Rail Transport

the Provincial Governments concerned. Another important event during this period was the purchase of the East Indian Railway and the concluding of a new agreement with the Company for management and working. The stock was purchased at an inflated value of 125 per cent, and on a capital outlay of £26·2 millions by the Company the Government had to pay £32·75 millions. Referring to this, General Stratchey said, "Under the system of what you may call sham private enterprise, the companies get a monopoly, and at the end of a series of years, if they are called upon to sell their property, which has attained an artificial value by reason of the monopoly that they get it is unreasonable that they shall receive a very large premium on their investment." ²⁴

In accordance with the new modified guaranteed terms introduced in 1880, three companies—Southern Maratha, Indian Midland, and Bengal Nagpur Railways—were floated. Apart from these, three other railways—Bengal Central, Bengal North-Western, & Rohilkhund and Kumaon Railways—were formed without any guarantee. According to the new terms, the Southern Maratha Railway was guaranteed interest at 3½ per cent, the stipulation being that 75 per cent of any surplus of net earnings left after payment of interest should be credited to the State. In respect of the Bengal Nagpur too, the same stipulation was made except that the interest guaranteed was 4 per cent. The Secretary of State had the right at the termination of 25 years or decennially thereafter, to purchase the railway at par. The contract entered into with the Southern Maratha Railway was novel. It practically involved the laying of the responsibility for raising capital on the Company in lieu of the State and thus made a cat's paw of it. The Company had to raise the requisite capital of £5 million while the railway was to remain the

²⁴ Evidence before Select Committee—Quoted from Sanyal: *Indian Railways*, p. 137.

property of the State; a permanent guarantee of $3\frac{1}{2}$ per cent interest was made and a fourth of the surplus in excess of the interest charges was to be the company's share for management. While the State would purchase the railway at par, the company could terminate the contract at a year's notice and withdraw its moneys. The Assam Bengal Company formed in 1892 is another interesting example wherein both the Company and the Government provided capital. A $3\frac{1}{2}$ per cent rate was guaranteed, and the surplus was to be divided between the partners in proportion to the sums provided by each.

Hitherto, the Government policy had been to undertake construction of productive lines only. It was now rightly felt that the State should undertake to construct unproductive lines because private companies could not find them attractive enough. The Select Committee of 1884 that went into this question, abolished this distinction between productive and unproductive lines and recommended that lines essential for the development of the country or for famine relief purposes should be financed out of the Famine Insurance Fund. The Committee was against the policy of financing railways out of taxation and condemned the suggestion that the interest on £11·25 millions of railway capital should be paid out of the Insurance Fund. This period (1880–1900) is characterised by the greater attention paid to branch line construction. The terms suggested in 1893 for these were too liberal and had to be subsequently modified in 1896. These included the usual grants of free land and free surveys besides a minimum guarantee of 3 per cent on the capital. The new expedient of offering a maximum rebate of 20 per cent on the gross earnings from traffic interchanged with the main lines was tried in lieu of guarantee of interest.

The turn of the century marked an epoch in the financial history of Indian Railways. For the first time

Road-Rail Transport

after nearly fifty years there was a net surplus left over. From 1848 to the end of the century, the losses alone amounted to Rs. 75.95 crores. The undertaking of large schemes of development led to increased revenues, and "owing to the extension of Irrigation Works in the Punjab and Sind, the great North Western Frontier Railway had ceased to be the Cinderella of the Indian Railway system and has become one of the most important grain lines of the world, choked with traffic at certain seasons of the year." ²⁵ With the all-round improvement in trade and industry and the need for railway extensions, the policy adopted was to terminate the contracts with the old guaranteed companies. The Eastern Bengal, the Oudh and Rohilkhund, the Sind-Punjab and Delhi and Southern Punjab Railways were purchased and came under State Management and the last two were absorbed in the N. W. Railway. The Bengal Central was acquired and passed under the Eastern Bengal Railway and the South Indian, the M. & S. M. and Bengal Nagpur Railway companies had their contracts renewed under terms more advantageous to the State, such as reduction of capital and rate of interest and greater share in profits. Under the existing conditions, the lines worked are State property and an increasing part of the capital, state owned. All further capital expenditure is to be financed either by the Government or by the companies which are under strict control of the Government.

Thus today, we have a varied railway system due to the confusion and lack of continuity in early policy. As regards ownership and management there are railways—state owned and state managed, state owned and company managed, company owned and company managed, railways owned and managed by Indian States, railways owned by Indian States but managed by companies, and lines owned by District Boards and other bodies and managed by either

²⁵ *Sixty Years of Indian Finance*: K. T. Shah, p. 310.

the state or by companies. Again, on the basis of revenue there are three classes; the first with gross earnings of over fifty lakhs per annum; second class with earnings more than 10 lakhs of rupees but less than 50 lakhs, and third class with gross earnings of less than ten lakhs.

A third form of classification is by gauges. We have the Broad Gauge of five and a half feet, the metre gauge of 3 feet 3½" and the narrow gauges of 2 and 2½ feet. In 1938-39 we had 21,164.61 miles of the first, 15,861.92 of the second and 4,107.20 of the third thus making an aggregate of 41,133.73 miles which is more than double the figure suggested by the Indian Famine Commission of 1880. This entire system is under the administration of the Railway Board of which the directing heads are the Chief Commissioner for Railways and the Financial Commissioner. The Board is in direct control of more than 17,700 miles of railroad and a predominant partner in systems covering more than 14,000 miles besides being the guarantor of interest to a number of companies. A Railway Rates Advisory Committee deals with rate questions. The Federal Railway Authority is to be the ultimate organ in direct control of this heterogeneous system.

Railway policy through the years does not redound to our credit. There has been mis-management in the past and our modern system is the outgrowth of a hotchpotch of different policies. The administration of railways under the companies has not been particularly happy. Discrimination is practised and was especially great in the initial stages. The "block rates" whereby competition was killed, as in Broach, prove this. Today, discrimination is adopted in the quotation of special port to port rates; there is an unhealthy difference between owner's and railway risk rates. The latter rates are so high that they do not reflect the actual risk run. Lastly, the exclusion

Road-Rail Transport

of the cumulative mileage principle is not beneficial to our interests. If the railways could adopt a more liberal policy in these respects, they would benefit immeasurably by this. Today, agriculture is pursued under unprofitable conditions. "A prosperous agriculture is at the foundation of prosperous industry, trade and transportation;"²⁶ and in this the railways ought to be our best allies. They should give a helping hand and do all that lies in their power to benefit themselves and the community.

We are now at the cross-roads. The supremacy of the railways has been challenged. A revolution has taken place in our transport system. The invention of the automobiles has been the greatest event of our times. Their low capital costs and flexibility and ease of movement make them unrivalled as purveyors of service within a small zone. They are best fitted to carry valuable and easily packed or perishable commodities within reasonable distances, and within a range of fifty miles they are "*sans pareil*." Having no great capital at charge, the expenses of operation are low. This, coupled with unscrupulous measures adopted to offer competition, constitute the greatest danger to the railways. Though their economic sphere is within a hundred miles, there are cases, as in the Punjab, wherein wheat is shipped for distances of nearly 600 miles as from Okara to Gwalior at a rate of Rs. 1-6-0 per maund as against a charge of Rs. 1-12-0 by rail.²⁷ It is therefore much cheaper to take to the road since this is not only very cheap—the cost of conveyance by road is about 1-50 to 1-75 pies per maund mile—but it also eliminates handling, packing and other charges necessitated in rail transport. However, this distance of 600 miles may be taken as an extreme case. In Madras the sphere of economic operation is about 50 to 100 miles, and this is also in conformity with the traffic

²⁶ Jackman—Economic Principles of Transportation, p. 580.

²⁷ Marketing of Wheat, p. 237 (Government Report).

analysis survey undertaken by the Assam-Bengal Railway. The losses estimated in 1935 by the South Indian Railway were 14 lakhs due to such competition. As a result of this, the various Railways find the strain particularly heavy. The electrification of the South Indian Railway was a consequence of this increasing competition. Since an electric service is much faster and costs only about 1.62 pies per mile, it is better able to meet such competition. In 1937-38, the earnings of the South Indian Railway from its electric service rose to Rs. 6,60,548 from Rs. 4,26,710 in 1931-32 *i.e.* an increase of nearly 50 per cent. Similarly, the earnings of the B. B. & C. I. from its electrified system in 1929-30 was Rs. 26.27 lakhs against Rs. 39.39 lakhs in 1937-38.²⁸

In an age of experiment and innovation, new and more efficient modes of conveyance have been and are being invented. So vast is the knowledge at the disposal of man, that the scope for such device is unlimited. The petrol engine which made its inroad in the early decades of this century has been continually improving. Methods have been effected to minimise the costs of operation. High powered cars with low running expenses have been introduced in the market. To avoid the high petrol bills due to excessive taxation and loss through vapourisation, the diesel engine is being increasingly preferred. But still, we cannot call a halt to this progress. Motor cars run on coal gas are making their appearance and in Madras many of them are running. The possibilities of these are at present limited.²⁹ A number of factors tend to vitiate their importance. The more important of these are the following: (1) Considerable loss of power is engendered unless the compression engine bore is increased by 25 to 30 per cent which would necessitate considerable expenditure. (2) The gas has to be cooled and filtered

²⁸ *Vide* Appendix A-2.

²⁹ *Vide* "The South Indian Motor Owner", p. 43, Feb. 1940.

Road-Rail Transport

and, as there is a tendency for carbon to be deposited, efficient compressing and cleaning machinery have to be implemented. (3) Gas and air have to be mixed together in correct proportions so that a mixing valve of complicated design is indispensable. (4) Correct proportioning of suction in the producer to meet varying engine speed and load conditions also present considerable difficulty. (5) There is, in addition the practical difficulty in obtaining good sized crushed charcoal free from impurities. Lastly, the high cost of machinery necessitated is a check to its development and would out-run the economy of operation. They are slow and have a low accelerating ability. In an age of speed, there does not seem to be much scope for this. So habituated have we been to this craze for speed that, as Rosita-Forbes, the great traveller says, we have been so effeminised that we would rather wait for half an hour at a bus stop than walk a mile.

The rapid increase in the growth of road motor transport has synchronised with the period of the depression so that both together have been responsible for a great reduction in railway earnings. Further comment is superfluous. The fact is inescapable that the situation is full of possibilities. The road and the rail are essential complement to each other; but, as the elements of dynamite which, though harmless in themselves yet, when fused together, run into a dangerous compound, when each starts competing with the other, the results are not easily foreseeable. Such then is our quandary. The spectre of uneconomic competition is not encouraging. The Railways are a national asset representing a capital investment of Rs. 754 crores, so that their financial solvency has to be carefully guarded. Neither should the road-motor be crushed out of existence. Each has its own sphere of influence and has its own part to play. The railways, if they are to maintain their financial solvency, will have

to steer clear between the Scylla of attenuated revenues and the Charybdis of uneconomic motor competition. The situation demands prudence and sagacity. Muddle-headedness and narrow vision would spell ruin.

All future policy will have to be directed along constructive lines. If the railways are to have their own, they must first reform themselves before they could expect the road service to be controlled. Rather, reform and control in either sphere should be concurrent. The railways can no longer view with indifference the needs of the public. The days when they held almost a monopoly in transportation are gone. Today, as never before, transportation needs effective salesmanship. The railways can only hope to better their financial position in two ways. Firstly, they should prune away their expenditure. The need for economy is great. There is an inadequate use of rolling stock and materials, and considerable scope for economy in workshop organisation. Secondly, they should attract custom by offering facilities. The amenities of the passengers have got to be looked to, freight traffic should be offered favourable schedule and station-to-station rates, and industries should be given all help in the choice of sites, construction of sidings and provision of warehousing facilities. New methods of freight carriage should be experimented with, such as express goods services, registered transit and container-service. These make for speed, safety and ease of handling. Under the second it would be incumbent on the railway to see to the safety of the consignments all along the line. The container system, however, needs crane power for loading and unloading the containers on the open trucks. So, its immediate possibilities are not very great. A refrigerator freight service is a great desideratum for the increase of traffic. In short, the railways should cease to adopt their stand-offish attitude and must realise that both they and the public are necessary agents in trade.

Road-Rail Transport

Control of the road vehicles has to proceed on well directed lines. Taxation of vehicles is the most generally accepted method of road finance. Since these use the road and contribute to its wear and tear, they should bear a proportion of the costs of maintenance. A vehicle tax is normal, but the difficulty is in gauging the use made of the road for a person who buys a car and runs thirty miles a day would be paying just as much as one who keeps it garaged. A tax on mileage in the case of motor transport may be considered. A foolproof mileage meter could be pressed into service and tax levied on that basis since it would be exactly in proportion to use. The difficulty, however, would lie in the collection of the tax. A tax on petrol also is equitable, since he who consumes more would be one who uses the roads most. It is simple and indirect, and has the advantage of not being felt. Its great drawback, however, is that it does not distinguish between transportation and industrial uses of petrol. A tax on tyres too would be proportionate to use, but here the difficulty would be that it would penalise the user of bad roads, as the depreciation on a tyre that has run ten miles on a bad road would be greater than that on a good road. Weight is a safe criterion in the taxation of freight vehicles since road depreciation varies directly with the impact on it. In the case of passenger vehicles, the tax is on the basis of seating capacity. Normally it is justified, but as it is not always that a vehicle runs to capacity, there is some element of arbitrariness. The person who operates a 23-seater during the rush hour would feel its incidence less than one who works during the slack time. Taxation according to routes is sometimes followed as it was once in Trichinopoly, South Arcot and Tanjore. The assumption here is that the less paying routes should be lightly taxed as against the more paying ones. Motor Taxation in India is one of the highest in the world and taxation in this Province is the highest.

The control of traffic takes the form of licensing and registration. Licensing may be according to routes or according to vehicles. The control exercised takes the shape of regulations with regard to speed, hours of work, fares charged and routes operated. An additional method of check that is sought to be introduced in India is insurance to cover third-party risks. The organisation of control should be vested in the hands of District and Provincial Transport Committees which would strive to restrict unnecessary duplication of services and to ensure a high level of efficiency. This would be possible by restricting the grant of licences for road operation. In the exercise of control, the three guiding maxims should be those of public need, priority of service, and protection of rival interests. Permission to operate services should be given only when the traffic catered for is new and when the prospective applicant does not, by so doing, compete with existing concerns. Finally, the licensed operator should be one who has had a clean service-record.

Monopolisation of services is a suggested method of control, since it would weed out the inefficient and make for larger expenditure on a well directed and planned scheme. But if the mal-effects of monopolisation are to be guarded against, it should be vested in a public body which would avowedly govern it on broad principles of public utility. But the drive for efficiency and the zeal for reform, peculiarly characteristic of a competitive system, are likely to be absent under a monopoly.

The sovereign end in view should be the effective co-ordination of the road and rail services. A central co-ordinating authority should be able to judge their respective spheres of operation and plan the transport system along well directed lines. Such co-ordination could be either voluntary or statutory. The basis of all such measures should rest upon the great realisation that each

Road-Rail Transport

is complementary to the other for, as Hofmeyer said even as early as 1925, “ It is coming to be admitted that the road problem is a national problem, it is not yet quite so clearly realised that it is part of a bigger problem—the problem of transportation, and that for its satisfactory solution there must be a clearer linking up than exists to-day between the road and railway administrations.”

CHAPTER II

THE THEORY OF RAILWAY RATES

It would not be too much to say that there is probably no subject in the whole sphere of political economy that is more interesting and deeply affecting industry and trade than that of transport and that there is possibly no other field wherein the theory of rate fixing is more vexatious and hedged in with unending difficulties. The name " Political Economy " has been used advisedly in preference to its more recent substitute " Economics " because railway transport is becoming more and more the concern of the governments of the different states and, as a necessary concomitant, railway rates are more likely to be the toy of politicians. In spite of the importance of this question, it must, doubtless, be confessed that much of the theory of rate-making is still in a nebulous state and that the subject does not attract that amount of attention that is its due. Doubtless, this is not meant to be a sly reflection upon our sagacity but is a bare, unvarnished confession of hard facts. The reason for this supposed apathy or indifference is not far to seek; it lies in the very intricacy of the subject. Needless to say, then, that the theory of railway rate-making has been tardily drawing the attention of even professional economists only since the turn of this century, nearly half a century after the introduction of the steam Leviathan. Nineteenth century railway transport was conducted on principles akin to road and canal transport and it was thought of only as an improved kind of highway. The companies did not reserve unto themselves the sole monopoly of the track, and shippers were allowed to put their own trucks and vehicles on the line utilising their own motive power in lieu of a money return which partook of the nature of tolls paid on the turn-pike roads. It was only gradually that it came to be recognised that there should be no third party on the track and that the service

Road-Rail Transport

of transportation should become a monopoly of the rail owners. Thus, only after railway transport came to stay and people became alive to its vast potentialities, rate policy has been slowly taking shape. Even today, after many decades of experience and experimentation, we cannot claim to have arrived at any final solution which we could offer as the only and correct one; there can be no finality about rate policy and an *aqua regia* for all our transport ills lies only in the imagination of the economist-alchemist. Rate-making in transport is at best a tentative measure; it is an art and not a science and must be attempted, according to Bagehot "in a sort of twilight, in an atmosphere of probabilities and doubt where nothing is clear, where there are some chances for many events, where there is much to be said for several courses, where nevertheless one course must be determinedly chosen and fixedly adhered to."¹ The railway administrator cannot, therefore, declare a certain rate for a given commodity and enter it straight away in the tariff book and say that that was inflexible and could under no circumstances be changed. Obviously, such a procedure would be unthinkable for the very excellent reason that it is almost next to impossible to ascertain the cost of rendering transport services which alone could serve as an index in the fixation of rates. Railway rates, it need hardly be emphasised, are, after all, only the price that is paid for the service rendered, and the service offered by any transport agency is so varied and the costs incurred are so numerous that it is impossible to determine which costs, or what proportion of them, have been incurred in the transshipment of a particular person or commodity. Taking, as an example, passengers trains only for consideration, it is evident that there are a number of classes whereby one could travel and a number of carriages that have to be hauled, and amidst this plurality

¹ Quoted from Acworth's "Elements of Railway Economics", p. 73.

The Theory of Railway Rates

of passengers of different classes it would be impossible to say which particular individual was responsible for the incurring of a particular expenditure; and if the luggage side of the problem also were to be considered, the task becomes immeasurably more difficult. All that we can do is to arrive at some rough figure with some approach to exactitude; and, *ex hypothesi*, that rate cannot be deemed unalterable. Our demand for transport is not “*fundamental*,” it is *derived*, for transport is but the handmaid of industry, and unless there is a demand for it from the industries that feed it, it ceases to exist. There is an odd duality about transport. It has to depend for its success on the continued prosperity of industry, and industry, in its turn, needs adequate and cheap means of transport for its well-being. Thus, even as the ‘gentle rain from Heaven,’ it is twice-blessed, “it blesseth him that gives and him that takes.” Business, we all know, is never the same; there is not always that economic equilibrium which is a desideratum; it is subject to cyclical fluctuations the outstanding feature of which is a corresponding rise and fall in general prices. Railway rates, it must be reiterated, share the characteristics of prices and are returns for service rendered; and, being prices, it follows, *ipso facto*, that they should also harmonise with the general economic situation. Thus, to quote Mr. Jackman, “in order to be prosperous themselves the railways must serve prosperous communities. The rates which are established are tentative, and the ultimate test of each rate is the degree of prosperity which it brings to the producer, the carrier and the consumer of the products transported. No matter how thoroughly conditions are studied before a new rate is made, the results of the application of the former rate must be gathered promptly and in detail; and if the outcome as shown by experience has not been satisfactory, the rate must be changed in the light of facts.” Taken in its proper context and viewed from the correct perspective,

Road-Rail Transport

the theory of railway rates strikes even the most casual student of economics as a very fascinating and, at the same time, intricate subject. No apology would therefore be needed for a broad, if somewhat elaborate enunciation, of its underlying principles and methodology.

Costs and Rates. Transport is a form of industry and the railway is but one of its agents. All industries are carried on a profit basis, since, without the motivating influence of gain, no risks would be worth taking. Nevertheless, risk bearing, it need hardly be emphasised, is an integral feature of enterprise. Enterprise is the oil that lubricates the wheels of business, and as risk is its inevitable concomitant, the need for control immediately arises. The whole thing has been put with epigrammatic terseness by Mr. Robertson: "Where there is risk, there is control." Business control is a highly technical question but easily the first type and stage of control lies in the control of prices with the ultimate view of controlling profits; and control in a competitive economy is essentially different from that under monopoly. We are, now, not concerned with the question of control in relation to the structure of industry, but with the more immediate and primary question of prices. Prices, it has already been said, are a return for services rendered and are dependent for their fixation upon price determination. Curiously enough, though all industry is run on fairly generally accepted principles, there is a fundamental difference in the case of transport; with regard to all other forms of business, prices are the 'effect' and costs the 'cause', while in the case of transport the position is reversed. Here, rates have to be declared even before traffic offers itself; and in the absence of a correct knowledge of the incoming expenditure, rate determination is a matter of conjecture. Bearing this in mind, it is easily understandable how much more difficult the issue becomes when one analyses the cost structure of railway transport.

A peculiar feature of the railways is that once an investment is made, expenditure has got to be incurred irrespective of the nature and volume of the traffic that offers itself for transit. It is not like other services where you could sail close to the wind. This apart, probably the greatest difficulty in railway costs lies in the fact of its jointness. All students of economics are aware of the theory of joint supply and joint demand so ably enunciated by Dr. Marshall in his 'Principles of Economics'. There are certain commodities that cannot be dissociated from each other; the incurring of costs is joint since the production of one necessarily involves the other. Marshall's classical examples of wool and mutton and cotton and cotton-seed are explanatory and it is supererogatory to multiply analogies. Most railway costs partake of this characteristic and they have got to be incurred willy-nilly. The service rendered is varied: passengers of all grades are carried, their luggage is hauled, parcels are transhipped over vast distances and goods are transported continually. In the offering of these services, varied costs have to be incurred, most of which are difficult to apportion; there are the terminal costs, the expenses appertaining to the station staff, the depreciation charges of the rolling stock and the wear and tear of the track, besides a host of other expenses too many to enumerate. "With the exception that a portion of the expenditure on stations and buildings can be allocated to passengers and goods respectively, the whole of the expenditure on maintenance of way is incurred not for any of the separate components of that class but for the traffic of the line as a whole."^{1a}

Under normal circumstances of joint production it is possible to some extent to find out both the supply price as also the demand price of any particular agent of production. The price that will be offered for anything

^{1a} Acworth: *Elements of Railway Economics*, p. 38.

Road-Rail Transport

used in producing a commodity is, for each separate amount of the commodity, limited by the excess of the price at which that amount of the commodity can find purchasers, over the sum of the prices at which the corresponding supplies of the other things needed for making it will be forthcoming.² But Marshall adds in his footnote that this derived schedule for that particular factor of production has no validity except on the supposition that we are isolating this one factor for separate study, that its own conditions of supply are disturbed, that there is at the time no independent disturbance affecting any other element, in the problem, and that, therefore, in the case of each of the other factors of production the selling price may be taken to coincide always with the supply price. Thus what may be applicable to any single agent of production is equally so in the case of any single service offered under transportation. The difficulties confronting the administrator are the same, if more onerous, the costs to be analysed as varied, and the risk of miscalculation, as great.

Before proceeding further, it would be pertinent to point out here that geography plays a great part in the determination of costs. The physical configuration of a country is the greatest agency in the undertaking of expenditure. Professor Jackman gives a brilliant example of this. He takes the case of the great American prairies. There, between the highly productive East and the granaries of the Prairies, lies a vast stretch of barren area that has to be traversed. These 900 miles along the shortest route are therefore largely responsible for the incurring of a huge capital expenditure as also large running expenditure which yield no return; these are akin to the 'dead mileage' in highway transportation. The influence of the Great Lakes and the great St. Lawrence waterways offers a striking example in the case of Canada, while the Great Barrier in Australia is still another.

2 *Vide* Marshall: *Principles of Economics*, p. 383.

Turning to India, we find that the lay-out of the country has played an equally great part in railway history. The negotiation of the Western Ghats in laying the line between Bombay and Madras has been a triumph of engineering skill, and MacGeorge's "Ways and Means in India" is overflowing with examples and praise for the marvellous foresight and manner in which great hindrances were overcome and Nature harnessed to serve the needs of restless Man. Another manner in which geography has a controlling influence is with regard to climate. Lying almost entirely within the Tropics, India is one of those great lands that have a monsoon type of climate; consequently the country has an average annual rainfall that is particularly high, rendering the soil wet and loose. The dampness of the soil necessarily engenders the use of iron on a much larger scale than in many countries. Normally, other countries use wood on a large scale for sleepers, but in India wood is susceptible to decay due to humidity and moisture, and iron has to be substituted. So too in the case of bridge work, recourse is had almost entirely to iron for the structural work, since good stone is not easily accessible everywhere and good brick earth is not procurable.

Reverting to our analysis, we find that railway expenditure is of two sorts: constant and variable. Railway expenditure can be broadly brought under five categories *viz.*, (1) Maintenance of way and structures, (2) Maintenance of equipment, (3) Traffic expenses, (4) Transportation expenses, and (5) General expenses. Roughly speaking 20% of the total operating expenses could be allocated for the maintenance of way and structures, another 20% goes for the maintenance of equipment, 4 to 5% is due to traffic expenses and about 50% is directly due to transportation while 5 to 6% could be credited against general expenses.³

3 *Vide* Jackman: *Economic Principles of Transportation*, pp. 94 & 95.

Road-Rail Transport

This shows what a small percentage of actual costs is directly due to transportation, and that of these a large portion is constant. Track laying and other structural works entail constant expenditure and have to be incurred whatever be the volume of traffic offering; so too the expenses for maintenance of equipment. The wear and tear due to depreciation of rolling stock is largely a constant quantity since much of the depreciation is always taking place irrespective of traffic, while only a small amount is directly due to service. Thus, for example, the depreciation expenses for a locomotive that is almost all the time in the shed would be about as much as for one which is constantly on the line; the same is applicable to workshop expenses, maintenance of permanent way, etc. A large part of traffic expenses also is constant, since these are due to propaganda and solicitation for business which is a normal feature of all undertakings. Probably the largest varying costs are due to the direct cost of transportation, but even here some part of it is fixed. The largest item here, is composed of the labour cost and the expenses of station staff. It is needless to stress the fact that the expenses incurred hereunder do not necessarily always vary in direct proportion to the traffic. If business were to be dull and, therefore, the traffic offering were less at a given time, that would not lead to an immediate dismissal of railway employees and workmen. The consumption of coal and fuel is about just the same whether a locomotive handles heavy or light traffic. So too with regard to engines that are actually on the line or under steam ready for any emergency. In either case, the costs would be just the same whether there is a return or not. In the case of electrified services such costs would be comparatively less.

The foregoing discussion shows clearly how small a percentage of total costs is directly attributable to prime costs and how large a percentage to supplementary costs.

The Theory of Railway Rates

Mr. K. C. Srinivasan⁴ points out that it is possible to alter the rates between fixed and varying expenditure, and one method of doing so, he suggests, is by increasing capital expenditure. A high powered machine or locomotive fitted with the latest developments in engineering technique, though costlier than one of less perfection, would be responsible for only a much less expenditure under variable expenditure. Suppose a tunnel has got to be bored to avoid a circuitous route, then, though the cost incurred in boring it might be much greater, in the end it would be found that the operating expenses would be much less. Moreover, railway transportation is an industry subject to increasing returns so that it is possible to a large extent to keep down the operating rates. For Indian Railways the percentage of ordinary working expenses on earnings since 1925 has been round about 55%; it was highest in the year 1930-31, being 71.25%. This rise in the ratio was the direct result of the depression due to which total revenue receipts fell to Rs. 94,63,40,000 from Rs. 102,40,11,000 in the previous year, while working expenses were almost just the same being Rs. 67,45,47,000 and Rs. 68,17,93,000 respectively. Since 1936 there has been a tendency for the ratio to decrease, and is now about 52%. With regard to the American Railways too, Professor Ripley comes to a similar conclusion and believes that more than one half of the operating expenses is independent of the volume of traffic.

All along we have been using the word cost. Let us now pause and see what it means. The generally accepted meaning includes all the expenses included in the service rendered, but it might be also taken to mean "extra" or "additional" cost. It has been shown at considerable length that a large part of transportation expenses is fixed and has to be incurred without its being proportionate

4 "The Law and Theory of Railway Freight Rates."

Road-Rail Transport

to the traffic; we have also seen that railway transport is subject to the law of decreasing costs so that, as a necessary corollary, 'cost' might be taken to construe extra or additional cost. The railway official always has this in mind and welcomes any additional traffic that pays its way. Supposing there are a hundred wagon-loads of wheat offering to be transhipped; then, in determining the rate he would like to charge, the guiding factor in rate fixation would be the extra expense that would be incurred in handling this freight, and any return that covers these out-of-pocket expenses would be preferable to allowing the traffic to go elsewhere. It is the cardinal principle of all transport that you should try to get all the traffic that you can and this explains why, in transport, there is so much scope for discrimination. Thus, if the railway official desires to get that consignment, as he doubtless would, he would be prepared to accept even a rate that just covers this extra cost. If that be so, should not, it is asked in some quarters, cost be taken to mean extra cost? Thus, even here, we can speak of a margin. The railways will be continually forced to incur a large amount of expenditure and they would naturally like to earn as much as they can before their rolling stock becomes obsolete. Under such circumstances when any customer wants a rate reduction, his demand would be conceded provided he could effectively prove his case. In some cases the traffic may not offer itself, in which case the railways would themselves have to go forward and tempt it by offering reduced rates; but the degree of the reduction would be determined by this margin, *i.e.*, the extra cost that would be necessary to move it. It is needless to point out that not all railway rates could be fixed on this principle, for if that were to be the case, the company would soon have to become bankrupt.

This leads us on to the question of special rates; these are purely exceptional rates designed to develop certain

industries. When a particular industry is started near a railway line it would be to the interest of the company if it offered the new concern all the facilities that it needed. It could permit it to have a railway siding and take an active interest in the location of the factory and could offer it specially low rates. If it did so, we should not immediately credit it with altruistic motives; there may be causes far more fundamental that dictate such action. After the industry has weathered the storm and found its legs, the company could raise its rates and make up for its past sacrifices; and moreover, the increased traffic resulting from such encouragement would net in revenues from a source which was previously non-existent. Such developmental rates are particularly a feature of economically less advanced countries like Australia, India and South Africa. Mr. Van Biljon has pointed out that in South Africa special rates are quoted for bulky agricultural and forestry products, metals, minerals and that the tonnage of cargo carried at special rates equalled 1,091,454 in 1935-36 compared with the total revenue earning traffic of 26,247,902 tons.⁵ The South African railways, says Mr. Frankel, are conducted on the most unbusinesslike principles. In 1921, the General Manager in his report said, "In order to assist farmers to remove their stock to fresh pasturage in times of severe drought the Administration has been called upon to allow concessionary rates for the conveyance of the stock. On production of the prescribed certificates the stock is conveyed free on the return journey and a rebate allowed of one half of the charges levied on the forward journey. In other words, the stock is carried throughout at quarter rates."⁶ In Australia two of the means adopted to retain for each state the traffic arising therein are the differential rates and the

5 T. J. Van Biljon: "State Interference in South Africa."

6 S. H. Frankel: "The Railway Policy of South Africa", p. 129.

Road-Rail Transport

export taxes on commodities sent across the frontier for transport on the railways of an adjoining state.⁷

The question of special rates has been made the ground for complaint by the Indian Fiscal Commission. It carefully examined the grievances put forth by Indian business and agreed in the criticism that the quotation of rates in such a manner as to encourage traffic to and from the ports was detrimental to the interests of internal traffic and found itself heartily in agreement with the views expressed by the Indian Industrial Commission which suggested that railway rates should be quoted in such a manner as to give a fillip to industry and trade. Developmental rates, they argued, should act as a second form of protection and all the arguments that could be adduced in favour of the grant of aid to infant industries could be equally applied in the case of railway rates.

Finally it expressed its view as follows:

“ We recognise with the Industrial Commission the danger of a policy of individual concessions to industries, and of treating railway rates as an indirect method of subsidy by the State. But we think that within the limitations laid down by the Industrial Commission, it is not unreasonable that special rates should be granted for a term of years to new industries and even to others if they can make out a proper case for special treatment.”

Cost of Service. We have hitherto considered at some length the nature of railway costs and seen how far they are determinable. Let us now consider the theory of railway rates. The cost of service theory purports to base railway rates on the cost and finds its justification in the general acceptance of this idea in business. In the foregoing pages it has been abundantly shown that rates are just “ *prices* ” and that they should be recommended

7 E. A. Pratt: “The State Railway Muddle in Australia.”

as the only justifiable basis of charging traffic. What could be more practicable than that a particular commodity should be charged a rate that is proportionate to the cost that it engenders? That is so in all industry. But railway transportation differs from ordinary conditions of business in so far as it is conducted on monopolistic lines, and under monopoly the cost principle ceases to be of importance. It is only under conditions of competition that cost is the regulator of prices. Even under competitive conditions, it is only in respect of those industries that are subject to decreasing returns that a definite marginal cost is determinable. Under increasing returns the external and internal economies regulate cost and by their very nature these economies, once they emerge, are equally enjoyed by every different unit of production so that there is no room for the concept of a marginal cost. Railways, it may be repeated, work on this principle of decreasing costs. Here, most of the expenses are fixed, and it would always be in the interests of the company to get as much traffic as it economically could.

Though most of transportation expenditure is joint, there are certain costs that are ascertainable. For example, every railroad operator knows that it would be much costlier to ship a wagon load of cotton than a wagon load of coal; again, the expenses incurred by an express locomotive would be definitely different from those of an ordinary locomotive, while the cost incurred by a goods train would be found different from those of a passenger train. The cost for hauling a longer train would be greater than that for a short one, and where the commodities have to be transhipped over a longer distance, and it is very much greater if there are certain terminal services to be rendered which would mean increased rates consequent on these terminal expenses. Thus, it is possible to ascertain some part of cost, though the large majority of cost

Road-Rail Transport

incurred are not directly apportionable. It is only under conditions of perfect competition that the cost phenomenon is seen in its purest form; but, as we have seen, railway transport is conducted under conditions of monopoly. It is not desirable that there should be competition, for if unrestrained, the rates would have of necessity to come down to that level which would just pay for the extra or additional cost that is incurred in moving that particular quantity of traffic. Obviously such a policy would be unthinkable in theory and impossible in practice.

What then, it might be asked, is the use of this cost of service principle if it should bear no relation to the actual rate structure? The great part of railway costs is fixed and rigid and is largely a payment for capital invested; but even the variable costs do not constantly change for every small reason. There would be no uniformity in the rates if they were made to conform to costs; these would change from place to place, from railway to railway and from year to year. A constantly shifting rate structure, whatever may be its theoretical justification, is a menace to industry since traders would be unable to ascertain beforehand what portion of their general expenses would be due to transportation. Certainly, no wise economist would advocate such a system. Another difficulty about costs is that they can be ascertained only after they are undertaken. For example, if a businessman were to ask for a rate for handling a thousand tons of produce the railway will not be able to quote a rate for the very excellent reason that it would be able to know what costs he would incur only after it has shipped the consignment. But, probably, the greatest criticism that could be levelled against the cost principle is that it would be impossible to put it into practice since certain commodities of low value but necessitating greater costs would be unable to bear a rate proportionate to cost, while commodities of great value and

easily portable would find that their transportation costs form only an infinitesimal part of total costs. Indubitably, this would not be favourable to the economic development of any country. The whole case has been put most succinctly by Mr. Frankel thus: "The level of the freight rates and passenger fares on any railway system is, moreover, directly affected by, and inseparably connected with, all the factors that influence the expenditure and operating costs of the railway. For those costs not only largely determine the level of freight rates and fares, but, as operating costs depend to a large degree on the volume of traffic handled, they are in turn themselves very considerably affected by the general level of rates and by the rates policy that is adopted. The latter is, therefore, in practice, inseparable from the general administrative policy under which, and the efficiency with which, railways are managed; and the level of freight rates is as closely determined by the extent to which the management is unhampered in developing, extending and improving the railway system in the most economic directions as by the alertness with which it adopts its tariff to the ever-changing economic conditions which must be met if the railway is not only to respond efficiently to the demands made upon it, but is to develop that volume of traffic which results in the economic use of the system as a whole, and which can alone ensure a low level of transport costs. In other words, a study of rates policy has to proceed *pari-passu* with an examination of the conditions which have affected the administration and finance of the railway as a whole and have led to the development of the rates in force." ⁸

In spite of the obvious defects of the principle of cost of service, it has the supreme advantage of setting the lower limit below which rates cannot be fixed since every rate must pay at least the out-of-pocket expenses. The upper

⁸ *Vide* Frankel: *Railway Policy of South Africa*, p. xv.

Road-Rail Transport

limit is set by the capacity to pay, and the actual rate declared would be somewhere between these two. The cost principle acts also as a check on the undue raising of rates that is possible under a monopolistic service like transportation. Thus, whatever may be the actual return for any specific unit of traffic, the ultimate end in view always is the maximisation of earnings. In certain very special cases the rate might occasionally be less than this extra cost, but such a policy would be only undertaken when there is a certainty that better and larger traffic would be developed and offer itself to ultimately offset the early losses. It is just as it is in the case of a commodity produced under monopolistic conditions wherein, to popularise the commodity, a price may be declared that is actually below cost but would ultimately be raised when the tastes of the consuming public are brought round in its favour. But these, it must be stressed, are only very exceptional cases. Referring to the particular question of railways, Dr. Marshall says, "The case is stronger when a railway company has a practical monopoly of the transport of persons and goods to a sea port, or to a suburban district which is as yet but partly built over; the railway company may then find it worthwhile, as a matter of business, to levy charges much below those which would afford the maximum net revenue, in order to get merchants into the habit of using the port, to encourage the inhabitants of the port to develop their docks and warehouses; or to assist speculative builders in the new suburb to build houses cheaply and to fill them quickly with tenants, thus giving to the suburb an air of early prosperity which goes far towards insuring its permanent success. This sacrifice by a monopolist of part of his present gains in order to develop future business differs in extent rather than in kind from the sacrifices which a young firm commonly makes in order to establish a connection."

To conclude, it is possible with rough accuracy to arrive at the average costs of transportation; and these rough figures are valuable enough in so far as it is not generally necessary in transportation to determine the exact costs; and these average costs are especially useful when the question regarding the justifiability of a rate comes up for consideration, or when the need arises for a change in the rate; under such circumstances our knowledge of average costs would serve to indicate just how much the change should be.

Value of Service. “ The value of service as a basis for rate making begins where the cost of service principle ends.” The cost of service principle by itself would be inequitable since it would penalise transport by aiding highly valued articles of small bulk to the detriment of low valued ones of large bulk, thus, giving an unnatural twist to the forces of economic progress. It is here that the principle of value comes handy. Reverting to our example of coal, we find that if the cost principle were to be adopted in this case, transhipment of coal would come to a stop, since it would be unable to pay such a high rate; but if value of service were taken into consideration, then, the whole position would be altered.

What is meant by the phrase ‘ value of service ’, and how does it operate in practice? It only means that instead of rates being made to conform with cost, they are made to harmonise with the sacrifice made by the payer. It is an axiom that transportation creates and enhances utilities of time and place; and naturally the difference between the value of a given commodity prior to transportation and its enhanced value after transport, measures the value of the service rendered. Normally, the whole of this excess in value is liable to be charged for, but, if that were actually to be done, transportation as a service would cease to exist, since no one would care to transport his goods over vast

Road-Rail Transport

distances if he were to be taxed to the full extent of this increase in value; it would be just as wise on his part if he refrained from undertaking the service and saved himself the unnecessary trouble entailed.

Thus, then, within the higher limit fixed by the ability to bear and the lower one set by the extra cost incurred in its handling, there is a margin which allows of commodities being charged according to the value of the service rendered. The ultimate criterion, therefore, is that of 'what the traffic can bear.' There is some difference of opinion regarding the connotation of this phrase; does it mean charging all that the traffic can bear? The absurdity of such a contention has been sufficiently pointed out in the preceding paragraph; 'Charging what the traffic can bear' is charging such a rate as will enable the commodity to move freely with the least burden upon the producer and the consumer, a rate which will not tend to discourage the flow of the traffic but, on the contrary, will maintain the existing volume of traffic and encourage its increase.

The three broad principles underlying are: (1) to get all the traffic, since railway transport works under conditions of increasing returns, and every additional traffic tends to reduce costs further and thus, in its turn increases traffic. (2) No rate should be charged so high as to be detrimental to the interests of the shippers; for, if the full difference in value before and after transportation was to be taxed, then traffic would stop. (3) Last, but not the least, the minimum for the quoting of a rate should be set by the extra cost incurred in handling that traffic.

Having these principles in view, we find that no other principle elicits so much approbation as that of the value of service. In the case of freight traffic the ability to bear a particular rate is determined by the value of the commodity; if value were to be less, the ratio of transport to general costs would be high, necessitating the declaration

of low rates to facilitate its flow; the opposite is the case when the articles are of high value. For passenger traffic, income is the measure of ability to bear, and it is the passenger who knows best by which class to travel. There is always this fundamental difference between passenger and freight traffic: in the former, the passengers grade themselves, while in the latter the gradation and classification is done by the railways. It is this power of determining the particular class to which a commodity should belong which is responsible for the vast power exercised by the railways, and it is this power of discretion that they enjoy which explains away some of the anomalies of railway rates and is the ground for quarrel between the purveyors of traffic and the offerers of the same. It is a power that can be both well used and ill used; but the chances always are that it will be properly used, since misuse would kick back by reducing earnings. Professor Edgeworth opines that it is far better and in the interests of the public that monopolists should have the power to discriminate, provided there is sufficient control, than that monopoly should be bereft of all such power. If, however, it were found that there are gross inequities perpetrated by monopolists, it would only mean that the control exercised is not sufficient. Under our system of economy, the consumer is king. There cannot be supply unless there is a demand, and so the service of transportation cannot arise as long as shippers do not come forward to offer traffic. Thus, the generating impulse is demand, and this, in its turn, depends upon the ability to sacrifice a certain sum in lieu of the service rendered, and this ability in its turn is controlled by the value of the unit of traffic. We thus see that all along the line there is control manifesting itself in a variety of forms, but the ultimate problem of the control of the railways as a public utility concern must of necessity be deferred to a later stage.

Road-Rail Transport

In commending this principle of charging what the traffic can bear, Acworth asks, 'Can any system of apportionment of this necessary expenditure be more equitable than one under which the rich well-to-do passengers, valuable freight traffic with the advantage of geographical situation close to the markets and the like contribute of their abundance; while poor third class passengers, bulky articles of small value, traffic that has to travel far to find the market, and so forth are let off lightly on the ground of their poverty. Translated into railway language, the principle means this: the total railway revenue is made up of rates which in the case of traffic unable to bear a higher rate are so low as to cover hardly more than out-of-pocket expenses; which, in the case of medium class traffic, cover both out-of-pocket expenses and a proportionate part of the unapportioned cost, and which finally, in the case of high class traffic after covering that traffic's own out-of-pocket expenses leaves a large and disproportionate surplus available as a contribution towards the unapportioned expenses of the low class traffic, which such traffic could not afford to bear.'⁹

But, probably, the greatest merit of this principle is that it is nothing new or special about transportation; it pervades all economic life and is the basis for all charges for service—the doctor, the clergyman, the musician, everyone acts instinctively on this principle. Its supreme excellence is that it conduces to the general prosperity not only of the purveyor but also of the purveyed and leads to the achievement of the Hedonistic ideal of the greatest good for the largest number.

Equal Mileage Rates. This principle purports to charge transport according to distance travelled and finds general acceptance in highway transportation. It is based on the simple fact that a commodity should pay a larger

9 Acworth: *Elements of Railway Economics*, p. 85.

sum when it is moved a greater distance than when it moves a shorter distance. The supreme merit of this principle lies in its broad logic and easy explainability. It needs no stretch of imagination or persuasive language to point out its fundamental assumption and, since the first essential in all public undertaking is ready comprehension on the part of the general public, this principle ought to commend itself to the layman.

Simplicity is not its only virtue; it is both simple and has the effect of infusing permanency into the rates structure. The use of mileage rates, it is claimed, has a tendency to stabilise the rate structure, thus tending to promote the normal development of business. It is argued by protagonists of this principle that a constantly changing rates schedule is apt to lead to a certain amount of suspicion, and make for uncertainty. When the businessman who wants to ship his cargo is uncertain of the rates he will be charged, traffic will not flow normally. In an atmosphere of certitude, transport operations can be undertaken without running any risk of being charged inflated rates.

A rate structure based on this principle leaves absolutely no scope for the exercise of discrimination by the railway monopolist. Discrimination, though a powerful influence in the economic betterment of the country, is the cause of much grave misuse and distrust; there is always the incumbent fear that particular classes of goods along particular routes would be favoured to the detriment of other classes. When a question of discrimination comes up for examination and arbitrament, the railways have the advantage of better equipment with statistical data and thus, are in a position to browbeat their clients into acquiescence. The classification of commodities is a highly intricate and tricky business in which there is immense scope for misclassifying, either wantonly or unwittingly.

Road-Rail Transport

In the words of the Inter-State Commerce Commission the classifying authority must consider "whether commodities are crude, rough or finished; liquid or dry; knocked down or set up; loose or in bulk; nested or in boxes; or otherwise packed; if vegetables, whether green or dry, desiccated or evaporated; the market value and shippers' representation as to their character; the cost of service, length and direction of haul; the season and manner of shipment; space occupied and weight; whether in car-load or less than car-load lots; the volume of annual shipments to be calculated on; the sort of car required, whether flat, gondola, box, tank or special; whether ice or heat must be furnished; the speed of trains necessary for perishable or otherwise rush goods; the risk of handling, either to the goods themselves or other property; the weights, actual and estimated; the carrier's risk or owners release from damage or loss."¹⁰ Obviously, there is infinite scope in this maze of difficulties to exercise undue discrimination. The equal mileage principle avoids this.

Lastly, it is the most natural basis of charging. In transportation accountancy all charges and costs are reduced to a 'per mile' basis, and such a system facilitates the easy comparison of rates and costs.

In spite of some of its outstanding advantages, this principle is subject to a good deal of criticism. Firstly, it fails to take into consideration the physical conditions of railroad operation and is only technically justifiable when there is a similarity of conditions. No one need be told that the principle fails to take into account such factors as the steepness of gradients, the geographical conditions of the tract through which the line runs, etc. Obviously, it is much more costly to haul a ton of goods a mile on a steep ascent than to haul the same ton on level

¹⁰ Quoted from Jackman's "Economic Principles of Transportation", p. 172.

ground; the motive force required would be greater, there would be a larger consumption of fuel, the wear and tear of the locomotives, rolling stock and the permanent way would vastly increase, and more than anything else, the speed attainable would be much less. Thus to charge traffic on the basis of equal mileage would go contrary to facts.

Neither is it equitable. The acceptance of that principle would lead to the penalising of the transport of goods of low value. Such low valued and bulky commodities like coal would find it impossible to meet the huge expenses that have to be incurred on a long haul. Thus, the natural tendency would be to restrict the sphere of transportation. The proportion that transport expenses would bear to total expenses in a long haul of a low valued commodity would be prohibitively high leaving the field open only for goods and commodities of high value that can afford to pay the high rates charged.

Railway rates, it may be emphasised, consist of two parts, one fixed and another varying; the former includes terminal expenses, while the latter includes the movement expenses. The terminal expenses are constant, whether it be a short haul or a long haul. Thus, if rates were to be charged according to mileage, it would be found that the proportion that terminal expenses would bear to the total expenses of transportation in the case of a commodity shipped a short distance would be ludicrously large, while in the case of a very long haul it would be very much less. These factors, together, restrict the scope of economic transport considerably and, therefore, the principle is an impracticable basis of rates assessment, more so in a country like India where goods and agricultural commodities of low value have to be transported over thousands of miles.

One other objection that can be brought against this principle is that as the railways are subject to increasing

Road-Rail Transport

returns, the cost of operation is proportionately less when the distance travelled is greater than when it is small. Under such conditions, to charge at an equal mileage rate would be to perpetrate an injustice. Moreover, the supposed virtue of stability of the rate structure in practice would turn out to be iniquitous. When general economic conditions are changing and economic values go into the melting pot, an equal mileage rate would be an anachronism. Lastly, it does not give due consideration to those competitive forces at work which ought to be the great regulator of all railway rates.

The defects of the equal mileage principle are thus patent; it is harsh, inflexible and untrue to actual conditions; it claims to be a stabilising agent, but this very merit is its chief drawback; it penalises the movement of some commodities and tends to prevent the utilisation of the most economical means of transport. Above all, it is a restricting influence and tends to crib, cabin and confine transportation within a small area.

Other Methods of Charging. Railway costs, it has been demonstrated, are inelastic in nature and this explains the adoption in Hungary of the Zone tariff. It can only work under a system of monopoly, else competition would be rife at those points at which the charge per mile is highest, and thus tend to destroy the very principle itself. Contrariwise, if the zones were to be narrowed down to get over this difficulty, it would destroy that simplicity which is its chief virtue.

There are certain small parcels of little bulk that form an essential feature of any transport system. In carrying these, the handling and transshipment charges vastly exceed the actual transit charge, so that in this case the Postal analogy is resorted to; this explains the simple scale of rates for railway parcels in Great Britain. This principle could really very well be applied to small consignments by

The Theory of Railway Rates

goods-train. The underlying justification for this is that as the size of the consignment decreases the divergence between the marginal and the average cost increases, and overhead expenses swallow up the actual transit charge.

Transportation costs, we have seen, decrease as the distance increases, since it is controlled by the law of increasing returns. It is, therefore, patent that as the distance travelled increases the rate must keep in conformity with the cost. This explains the origin of the telescopic rate. Mr. K. C. Srinivasan who has diagrammatically represented the telescopic rates curve puts it in mathematical language by saying that the rate should vary directly as the square root of the distance carried. That is, at double the rate, the unit of transport must be carried four times the distance, at thrice the rate, nine times the distance and so on. Obviously, the rate per mile will be greater than the equal mileage rate for the shorter distance and lower for the longer, and the rates curve, he points out, would be a parabola and not a straight line.¹¹

The latest innovation in railway rates is that of the "agreed charge." There are certain concerns which have large transactions with the railways and if their traffic needs were to be considered over a length of years it would be found to be pretty much the same. Here, a detailed study is made by the railway company of the previous years' statistics—weight, distance and charge per consignment, and a rate is agreed upon which would be charged upon all that trader's traffic. Where the traffic is of identical articles, the rate is fixed as so much for any unit of article irrespective of distance while, where it is heterogeneous, it is fixed as so much per ton or package irrespective of destination. This principle is just the same

11 K. C. Srinivasan: *The Law and Theory of Railway Freight Rates*, p. 27.

Road-Rail Transport

as the deferred rebate system on shipping and binds the trader with the transporter into very close relationship.

Summary. In the foregoing pages we have briefly sketched the theory of railway rates. We have seen how intricate is the art of rate making and have discovered how in actual practice rate structures are formulated. It has been pointed out that for a proper declaration of rates, accurate data of costs statistics are necessary and the difficulty of ascertaining these has been abundantly made clear. We have found that railway transport is subject to decreasing costs and that railway costs are for the most part joint; these, we have seen, fall under the two categories of fixed and varying costs, the latter forming a small proportion of total costs. From our study of our cost analysis we proceeded to review briefly the various principles of rate making—the cost of service principle, the value of service, equal mileage and telescopic rates, zone tariffs and ‘agreed rates’. Taking up the main strands anew, we find that, on principle, the policy of charging what the traffic can bear is the most equitable and is the basic feature of enlightened taxation policy. It is the only just and workable principle; it is a principle ‘not of extortion, but of remission and alleviation.’ What the traffic can bear means, as we have already seen, what the traffic *will consent to bear*, and such a policy is at once in the interests of the railway and industry. For even the lowest class traffic will contribute a sum even ever so little above its actual cost of transportation and this would in some small measure go to meet those overhead charges which otherwise would have to be borne entirely by the higher class traffic alone. It thus confers a blessing on low-valued traffic and rids the high valued goods of part of their burden and always, above all, tends to maximise the net revenue earnings of the company.

CHAPTER III

RATE MAKING IN PRACTICE

IN the last chapter we had occasion to study the theoretical basis of railway rate making and have seen how very difficult it is; but, when we come to the practical side of the question, we find it all the more complicated, since there are a number of considerations that cloud the issue and make rate policy more a question of expediency. The truth of this is better realised when one pauses a while to consider the vast influences that go to mould rate policy. The Freight Manager has perpetually to glue his attention on the general economic conditions and to go into the details of cases as and when they come up for consideration. He has to investigate into the reasonableness of the rates fixed, and when a question of equity crops up, he must be prepared to study the issue in its true perspective, prove its validity; and, if he finds that changed circumstances call for a revision, he has to revise them. He cannot set to work like the engineer with his set square and plumb line and come to any conclusion with mathematical exactitude. He should not pin his attention only on the cost or value of the traffic offering; he must have his eyes wide open and must be prepared to have a ready ear for all suggestions. Above all, he must be dispassionate.

Apart from the broad principles enunciated in the last chapter, there are other factors that go to determine rates. Firstly, there are the terminal charges which are constant, irrespective of the length of the haul, and are a payment for the handling and other services rendered at the termini. In early days, when the volume of traffic was small, the terminals were just places from which trains started or at which they reached and offered very little facilities to the transporting public. But today, the purveying of terminal facilities is a wholtime job and calls for the best brains. Secondly, the rate also depends to a large extent on the

Road-Rail Transport

length of the haul; where the length is long the rate is proportionately less, and where it is short, it is great. It is obvious that short distance rates should bear a greater proportion of costs, since the terminal expenses are always the same, and because of the working of the law of diminishing costs, the longer the distance travelled the less is the cost of operation. A third factor is the bulk of the traffic. On the Continental and American Railways the classification is according to car load or less than car load; and specially reduced rates are quoted on car load traffic. This is quite intelligible, since, in case a car is half-empty, the traffic has got to be handled and the expenses will have to be incurred; but if the car were to run full, the expenses would be just the same, except possibly for a slightly increased allowance for depreciation and handling charges, but the revenue receipts would be doubled so that it would also be in the interests of the company to draw traffic towards itself by quoting favourable rates for traffic that moves in bulk. Usually, large traders who have vast transportation expenses to incur and have their own private railway sidings would always find it in their interest to book their goods per C. L. (car load). In India, the classification is according to wagon load. This apart, certain minimum weight conditions may be laid down. Naturally, it would be unwise if goods of any quantity were to be accepted, since the traffic receipts should at least cover the out-of-pocket expenses that would be incurred in hauling them. The South Indian Railway, for example, makes a minimum specification of 300 maunds per four-wheeled wagon. Sometimes it does happen in the case of through traffic over more than one railway there is some difficulty, since it may not always be the case that all of them make minimum weight specifications and at the same rate. In such cases, the minimum weight of the nearest Railway which has a weight condition will be applied on those railways that notify a minimum weight

for charge, while, on the other railway the charge will be according to the actual weight. Fourthly, much depends on the time at which the traffic offers; if it is urgent and calls for express delivery and offers at a time of specially brisk business, a higher rate would, *ex hypothesi*, be quite justified, while during the slack season or during periods of depression, lower rates would be in keeping with the general economic condition. A fifth factor is the conditions of package of the consignment. Articles and goods that are neatly packed and occupy little space would be better treated than loosely packed goods that, of necessity, occupy more space. It is obvious that as the capacity of the wagon or truck is fixed, goods belonging to the latter category should be charged more. Possibly the greatest difficulty arises during shunting operations, since if the goods are fragile and loosely packed they will have to be loose shunted entailing extra expenditure on that account. Sixthly, the rate is also determined by the conditions of haulage; that is, whether it is at Owner's Risk (O.R.) or at Railway Risk (R.R.). In the latter case, the rate would be more than what it would be in the former since the railway, then, would hold itself specially responsible for the safe transhipment of the goods. Probably the most important consideration that overwhelms the others in point of importance is the fact of competition. As between rival railways, there would always be a tendency on the part of either to draw traffic towards itself by quoting specially competitive rates. Indubitably, excessive competition between railways would spell ruin as past history has shown, and that is about the strongest point in favour of State ownership of railways. Even on the same railways, there might be competing routes so that rates would have to be made in accordance with them. It is here that discrimination steps in, and much of railway controversy centres round this. Nowhere at present is competition seen in all its banalities than in the sphere of

Road-Rail Transport

road and rail transport. The burning topic of the day is this question of the unhealthy rivalry between road and rail which cries for immediate solution. The problem is of insistent importance and calls for detailed investigation which must be reserved for a later chapter.

Before proceeding to discuss some of the points that have been referred to in the last paragraph, it would not be out of place to mention a very curious example of extraneous control of railway policy. Section 127 of the South African Railway Act states that 'so far as may be, the total earnings shall be not more than are sufficient to meet the necessary outlays for working, maintenance, betterment, depreciation and the payment of interest due on capital not being capital contributed out of railway or harbour revenue, and not including any sums payable out of the consolidated Revenue Fund in accordance with the provisions of Sections 130 and 131.'¹ It needs no stretch of imagination to conceive the restricting influence of that clause; by making railway receipts strictly equal to expenditure it renders it incumbent on the Rates Manager to forecast expenditure with precision even before such expenditure is incurred so as to afford a basis for rate making. It has been sufficiently demonstrated how very difficult it is to predict expenditure since expenditure itself would depend upon rates and the rates will have to depend upon the volume and nature of the traffic offering, which, in its turn, would determine the expenditure to be incurred, thus landing us in a species of vicious circle out of which we cannot easily extricate ourselves.

The first task of the Rates Manager would be that of classifying the goods, for then only would it be possible to know at once the rate fixed for a particular commodity. The classification is always on the basis of value, the higher valued articles bearing a higher rate in comparison with

1 *Vide* Frankel: *Railway Policy of South Africa*, p. 78.

the lower valued ones. Needless to say, cost also determines to a large extent the class applicable. Even in England, it was not till 1842 that the Railway Clearing House was established and was incorporated by Parliament only in 1850. In 1919, the Railway Rates Advisory Committee was appointed. It enhanced all rates, and 'embraced the new principle of levying a flat rate in addition to the mileage rate in order to make up for the difference in the cost of service between long and short hauls.' The new classification issued in 1923 came into force in 1928. The commodities carried by goods trains were brought under 21 classes while those by passenger trains were brought under 19 heads. A feature of the new classification was the increase in the minimum weight classification. The American classification is more like a station-to-station list and is the result of a slow process of evolution. The most remarkable feature of the early American classifications was the lack of unification so much so that there was a plurality of rates originating on the same line; and this was sought to be rectified by the Mann Elkins Act of 1910 which empowered the Inter-State Commerce Commission to adopt a uniform classification. On the American Railways, the classification is according to car load and puts the highest class first contrary to English and Indian practice. At present there are three great classifications called the 'Official,' 'Western,' and 'Southern' in the consolidated freight classification consisting of 14 classes.

The Official classification is in force in the territory north of the Ohio and Potomac rivers; the Southern classification applies to the region south of this and the Western classification to areas west of these two regions. There are eight classes in the Official classification known as first, second, third, fourth, fifth, sixth, Rule 25 and Rule 26. These apart, certain commodities are charged at

Road-Rail Transport

1½, 1½, 2, 2½, 3 and 4 times the first class. "In the making of rates in Official classification territory, the rates for the lower classes appear to be related to the first class rate according to the following percentages; first class 100%; second class, 86½%; third class, 66⅔%; fourth class, 46⅔%; fifth class, 40%; sixth class, 33⅓%. These figures are an approximation to the facts, but they are not standardised at all. In the same way, the Southern classification is represented by 10 classes, six designated by the first six numbers and four by the first four letters, with other items as 1½, 1½, 2, 2½, 3 or 4 times first class; while in the Western classification there are five classes numbered 1, 2, 3, 4, and 5, and five other classes represented by the letters A, B, C, D, and E, with various articles rated at 1½, 1½, 2, 2½, 3, 3½, or 4 times first class."² These classifications, it must be here mentioned, are not rigid and do not apply to water tight areas. In many cases these overlap and many instances are known where the rate schedule under one classification applies to areas that are beyond its jurisdiction. Finally, while these are the general classifications, there are individual classifications for the different states to regulate inter-state traffic. These are made by the respective state rail-road regulative tribunals concerned.

It is thus patent that classification is a public business in the conduct of which due consideration should be paid to all interested parties so as to focus attention on the issue and to obviate any anomaly that might otherwise creep in. Having determined it once, it does not, therefore, mean that a classification is fixed or rigid; it is changeable and does change with the conditions that determine its fixation. As such, however desirable uniformity may be, it is, nevertheless, a truism to say that it is not only

² *Vide Economic Principles of Transportation*, W. T. Jackman, p. 169, *et seq.*

impossible in practice but also condemnable on principle. An assertion such as this does not necessarily argue for a heterogeneity of classes. Broadly speaking, while a classification ought to be made in consonance with economic equity, there should be a measure of fair uniformity that is so very desirable. What is meant by uniformity here is that similar rates should be charged for like commodities, the criterion being the value of the traffic handled. Our Indian classification errs on the side of too much of uniformity putting it, so to speak, into a straight jacket. Though there are sixteen classes in the Indian Freight Schedule, it must be confessed that they are not sufficient when the vast variety of commodities that constitute our rail-borne traffic is considered. Thus, for example, under the one head of 'grains and pulses' are placed the following innumerable varieties, namely: Bajree, Barley, Beans, N.O.C., Beans, (parched), Black Gram, Chowlee seeds, Chuni, Cowpea, (dry), Dhal, (gram) Gram (parched), Horse-gram, Indian Corn, Jowari, Karamony, Moong, Mussor, Mutt, Oats, Oorid, Paddy, Peas, Ragi, Kajgeera, Rice, Rice (beaten), Rice (pounded), Sago, Common, Tapioca (Sun dried), Toor and Wheat. "This classification does not apply to proprietary varieties of Grains and Pulses; for example 'Quaker Oats' packed in tins or bottles which are chargeable as Foods, patents prepared from Cereals or milk, or as 'Oilmanstores' as the case may be."³ The Inter-State Commerce Commission tried to effect a compromise by stating: "In our view a desirable arrangement would be to have in each scale at least ten classes related somewhat as shown below; practically all less than car load traffic to be confined to the first four classes and a redistribution made of articles in the car load classes:—

Classes	..	1	2	3	4	5	6	7	8	9	10
Percentages	.	100	85	70	60	45	35	30	25	22½	20

3 S. I. Railways Goods Classification, Part I-A, p. 235.

Road-Rail Transport

Many articles that now move under commodity rates and under exceptions to the classifications could be assigned ratings in such a scale that would result in the application of rates not substantially higher or lower than now apply." Such an arrangement would have the merit of achieving a degree of uniformity and, at the same time, of variety by placing a number of classes under which goods could be brought.

In the Indian classification we have sixteen classes fixing the maximum and minimum rates. The maximum rate gradually increases from 0.38 pie per maund per mile for the first class to 1.87 pie per maund per mile for the last. The classification is as hereunder:—

Class.	Pie per maund per mile.	Class.	Pie per maund per mile.
1	0.38	4B	0.72
2	0.42	5	0.77
2A	0.46	6	0.83
2B	0.50	6A	0.89
2C	0.54	7	0.96
3	0.58	8	1.04
4	0.62	9	1.25
4A	0.67	10	1.87

(classes 2A, 2B, 2C, 4A, 4B and 6A were interpolated as the result of a revision of the classification on 1st May 1936). The minimum for the five lowest classes was 0.10 pie per maund per mile and for the rest it was 0.166.

It is clear that the Indian Classification is *generally* equitable and the rates charged are about the lowest that are charged anywhere else. The Wedgewood Committee has convincingly pointed out that the rates charged by the Indian Railways are the lowest in the world. The reason for that is not far to seek. It is common knowledge that India is a very poor agricultural country which has to depend for its prosperity on the vagaries of the monsoon. Naturally, the bulk of the traffic that offers consists of

agricultural commodities of low value and large bulk which are inherently incapable of bearing a higher rate. That condition is not peculiar to India since on the Australian and South African railways specially low rates are quoted for agricultural commodities. In the absence of a widespread network of industries which would produce a variety of valuable products that could bear a high rate, low freight charges would continue to be a feature of our rates structure. Moreover, India is a vast sub-continent and the distances that have to be traversed are phenomenal ; such being the case, long hauls predominate necessitating the quotation of low charges. In this respect India bears a close analogy to Canada where, under the Canadian Freight Classification, there is scope for mixed traffic in carloads. Thus, if a particular commodity which would have to travel at L.C.L. (Less than carload) rates could find a shipment of another commodity together with which it could fill the car, then both of them would be eligible for the car-load rate which is always less than the former. To utilise this concession organisations have sprung into existence which collect these small shipments, warehouse them and then ship them off in car-loads. There is thus a dual benefit conferred on the shipper and the forwarding agent, as the former gets a rate concession while the later is paid a commission in lieu of the services rendered. In Eastern Canada, when such a mixed consignment is made in a car-load, the rate chargeable will be that for the highest classed article, while the minimum weight condition also will be the highest applicable to any single article. It is needless to stress the excellence of such a system, and the widespread adoption of this system in an impecunious country like ours is a much needed reform.

Apart from the sixteen classes enumerated above, there are also the schedule rates which are telescopic and station-to-station rates which are quoted to meet particular

Road-Rail Transport

trade requirements. Class and schedule rates have in addition a terminal charge, while no such charge is made in the case of station-to-station rates. The usual complaint against class and schedule rates is that they are too cumbrous and complex and that a smaller number of classes would be preferable. Such a thing is not surely in the public interest though it would save much of the vexation that may be caused by a plurality of classifications. The Railways contend that further simplification is not possible of achievement because of the vast variety of the traffic that offers. The merchandise is so varied that it necessitates the retention of such a large number of classes. The Wedgewood Committee point out on page 79 of their masterly report that our classification errs on the side of brevity rather than on the side of length and justly find fault with the manner in which these schedules are applied by the Indian railways. They remark that cement is carried on the class I railways at seven different schedules varying from 51 pies per maund for 300 miles to 114 pies per maund; that is at more than double the rate. The only justification for such a diversity would seem to lie in the fact of the cost of operation, for the physical conditions on a particular line may call for a higher rate. Nevertheless, one must deprecate an unhealthy lengthening of the list of classes. Referring to the difficulties confronted in the unification of classification in America, the Inter-State Commerce Commission tritely remarked thus: "It was perfectly obvious that the merging could not be effected by the voluntary action of railroad authorities which had made the classifications, without very great concessions being made on every side—concessions the necessary effect of which must be, while lowering the relative rates upon some articles of commerce, to very considerably increase them upon others. Not only would the roads be affected thereby, but every section of the country would of necessity be compelled to resign something

of the advantage which, before, it has enjoyed in respect to its special products or industries; and it could not be expected to assent to this willingly until it should be made to see that adequate compensation was made in other directions. It would not be enough that the completion of such a work would plainly be seen to be of national importance and politic and useful to the people as a whole, but it must also be evident to any particular section that it lost nothing by its accomplishment.”

Station-to-station rates are special rates quoted for the facile movement of traffic between two points. This depends upon the prospects of any industry that may be located there or upon the assurance of large movements of agricultural or mineral produce. Coal traffic is a special case in view and in the Indian classification coal gets preferential treatment on account of its bulk and low value. The difficulty in India is that there is a paucity of coal mines and the few mines that exist are all located in and about Bengal and Assam. Thus to meet both industrial and railway demand, coal from these mines has to move vast distances; for example, the distance between Calcutta and Madras, Bombay and Delhi is more than 1,000 miles. Naturally the rate must be as low as possible. In spite of this special treatment, the Indian Coal Committee refer in their report to the standing complaint made by the Indian trading community as to the rebates allowed and to the shortage of wagons. The South African railways also carry coal at special rates and, in comparison with them, the Coal Committee state that Indian rates appear quite favourable being only 0·30 of an anna per ton per mile. Firewood is another commodity that is carried at special rates. On the South Indian Railway, firewood is carried at Owners Risk between Theni and Madura at the rate of 2 annas per maund. The following are a few station-to-station rates quoted on the South Indian Railway :—

STATION-TO-STATION RATES

Commodities.	From	Stations. To	Rate per maund.	Proportions.	Date of introduction.	Reference to Goods Tariff Part IB, No. 4.
1. Grain; pulses & seeds common C/20; OR; L (R3/b 687/viii). Tuticorin ..		Pambakovil Shandy ..	0 2 7	..	15-9-38	32
2. Iron or Steel scrap CC, OR; L; S/19 ..		Vellore Cantt. Madras Beach.	0 3 9	..	25-8-38	39
3. Groundnuts W/160; OR; L. Asakalathur, Panruti ..		Cuddalore Jn. {	0 2 9 0 1 2	..	15-8-38	34 36
4. Groundnuts W/160; OR; L. Usilampatti ..		Negapatam ..	0 10 0	..	30-8-38	37
5. Cashewnut Oil.. Panruti ..		Ernakulam ..	0 7 0	..	1-5-38	..
6. Sugar R.3/4327/iv ..	Tinnevely Jn. ..	{ Kumba- konam .. Quilon .. Tanjore ..	0 6 0 0 4 5 0 6 0	minimum con- signment of 30 maunds each.		

Low station-to-station rates are the most powerful influence in the localisation of industries. By so doing, railways can help industries to spring up into existence in places which would have been unexploited but for the impetus offered by favourable rates. Nearness to markets, availability of raw materials and ready command of labour are the determining factors in localisation, but, by themselves they would be futile if they were not aided by adequate and easily available means of transport; for transportation, as we have seen, by creating or increasing utilities of time and place, enhances the values of commodities thus making for the rapid economic development of the businesses concerned in the first instance, and later of the nation itself.

It is usual with railways to specify a minimum weight condition, but, as all railways do not make the same specification, some trouble is engendered when traffic has to move over more than one railway system. In determining the minimum car-load weight, due consideration must be paid not only to the carrying capacity of the wagon, but also to the commercial conditions and costs of operation; it will have to depend upon a number of factors such as the character of the freight, the package, weight of freight, the nature of the risks involved, the type of container required. The South Indian Railway uses the following minimum weights in the case of through traffic:

Mds.	Mds.	Mds.	Mds.	
81	160	300	C.C.	For perishables the
100	200	400		minimum is 81
120	270	450		maunds and for
				non-perishables
				120 maunds.

(C.C. stands for carrying capacity).

Loose traffic or traffic in bulk is charged on the basis of the capacity of the wagon used. Their Goods Tariff

Road-Rail Transport

Part I A contains the following rules regarding minimum weight:—

- (i) In the event of the forwarding railway quoting a minimum weight for charge, such minimum weight will apply throughout, except on Railways quoting no minimum, in which cases charges on actual weight will be levied.
- (ii) In the event of the forwarding Railway having no conditions as to minimum weight for charge, that is, its rate applying on actual weight, the minimum of the nearest Railways that notify a minimum weight for charge shall apply on those railways, charges on actual weight being levied over other railways.
- (iii) As the condition of a maund rate cannot be applied to a wagon rate or *vice versa*, in the event of a railway having a wagon rate, the minimum weight condition of the forwarding railway will not apply over that railway, but will apply over those railways only that notify a minimum weight for charge.

The first rule needs no explanation, but the second one does. If, for instance, a particular railway, say A, charges a minimum weight of 300 maunds and another, B, places a minimum of 400 maunds and a third, C, charges on the basis of actual weight, then when a shipment is made passing over all these lines from A to C, the minimum specification of 400 will apply to A and B and the actual weight on C, while contrariwise, for a shipment from C to A the actual weight will be the basis for charge on C and 300 maunds over A and B. The third section may be elucidated thus: suppose there are four, railways A, B, C and D and that on A the minimum specified is 100 maunds, on B, 200, on C the charge is on wagon rate and D specifies a minimum of 300 maunds for charging at a

maund rate, and that a consignment of, say, tobacco moves from A to D, then, the minimum basis of the forwarding railway, that is, 100 maunds here by example, will apply over B and D, whereas on C the wagon rate would be charged. If, on the other hand, the same consignment were to move from D to A, then, while the wagon rate would continue in the case of C, the minimum of 300 will be applicable over the rest, it being the specification of D, the forwarding railway in this case.

On the South Indian Railway the minimum weight for any package that is to be despatched by goods train is 14 seers and the minimum for charge is half a maund. The minimum distance for charge is ten miles and the minimum charge is eight annas. Consignments of more than one class of goods are accepted, but in the calculation of the freight rate, each class is charged at its particular rate, provided the sum of the charges leviable on the different packages does not exceed the freight chargeable on the total weight at the highest rate applicable to any of the constituent packages, in which case the latter would be accepted. Likewise, heterogeneous consignments travelling per wagon load rates are liable to be charged at the highest rate applicable to any of the consignments that constitute the wagon.

Apart from the three classes of rates already referred to, namely class rates, schedule rates and station-to-station registers, there is another class of rates, known as 'Exceptional rates', which has been fully developed in England. These rates are expected to draw the maximum traffic by giving special treatment to particular kinds of traffic. Indian coal is an instance in point. Since the cardinal principle in all transport undertakings is to get the maximum traffic, such rates are justified. These rates often partake of the characteristic of 'experimental' or 'developmental rates.' It may so happen that the railway

Road-Rail Transport

may find it in its interest to develop particular traffic on some part of its line by the quotation of exceptional rates and later, when that traffic has been nurtured, developed and rendered capable of bearing a higher rate, these rates may be withdrawn and the tariff raised. More often, it might so happen that traffic between two points A and B is in one particular direction, say A to B, while the wagon cars may have to return empty on the return haul. It might also happen that there is a particular type of low valued traffic that might possibly be tapped at B provided the rates were sufficiently low. In such a case it would obviously be to the advantage of the railway to get some traffic instead of having to haul the wagons empty all the way back. The trucks have got to be hauled whether or not they are empty; and, after all, the actual transportation cost is, as we have seen in the previous chapter, a small portion of total costs. The only other alternative would probably be to charge the outgoing traffic from A to B such a rate as to cover the costs incurred on the return haul. Such a policy would not be in the interests of the railway since the high rate would frighten traffic off the line, and today with our highly developed highway transport system waiting to sweep traffic off the railways, such a procedure would be financially detrimental and economically ruinous.

More often, the initiative comes from the commercial classes themselves. Most industries find that they are suffering from particular handicaps, real or imaginary, justifying special treatment for them. There is a fairly widespread complaint in India that the rates for certain commodities instead of being progressive are positively regressive and bear unduly on the producers. It will not be possible at this stage to go into detailed consideration of the problem of railway rates in relation to industry; that will have to be deferred to a later chapter wherein the economics of particular commodities will be studied

with specific reference to the incidence of transportation expenses on prices. It may also happen, on the contrary, that a flourishing business intends to spread out its area of operation by branching off on another line and is therefore desirous of knowing beforehand the particular rates that it may be charged. The railways in their turn would be anxious to know the volume of impending traffic so as to relate rates with costs of transportation and in such cases it has to depend upon the veracity of the statements of the business organisation concerned. Ultimately, whether it is the railways that declare these so-called 'missionary rates' or the commercial classes that ask for them, the ultimate end in view is the economic development of the country. In this respect, railway rates act as a sort of protective tariff and, by quoting exceptional rates, they are able to increase the competitive power of the nation's products. Much of Canada's economic development is due to such a policy, and Hamilton in Ontario came to prominence as a manufacturing centre through the low rates on fuel and raw materials; the same is true of the vast increase in the sugar traffic of Ontario consequent upon the setting up of numerous refineries. This is but another example of the immense potency of the railways in the regeneration and development of national welfare.

While still on this point, it may be pertinent to observe that the English Railways Act of 1921 introduced a new classification of 21 classes whereby most of the exceptional rates which were responsible for 75% of the total traffic of the English Railways were displaced by standard rates. There is a certain unhealthy stickiness about exceptional rates; once they are made they have a tendency to get fixed even after the conditions that called for them have ceased to exist. The English Railways Rates Advisory Committee in making their recommendations on this question expressed themselves in a paragraph that deserves to be quoted *in extenso*.

Road-Rail Transport

“ We advise that it should be declared that all exceptional rates for which no substantial justification can be shown are to cease to exist as from an appointed day, being, say two years, from the adoption of the new rates based upon the new classification, but that, in the meantime, any person in the continuance of an existing exceptional rate should be entitled at any time, within two months after the new rates are adopted, to apply to the railway company which granted the rate or to the railway group into which that company is absorbed to extend the exceptional rate, and such company should be empowered to agree to the continuance of the rate, provided (a) that the exceptional rate is not greater than 10% below the corresponding class rate, and not smaller than 40% below the class rate, and (b) that use has been made of the exceptional rate during the year preceding the rate when the new rates are adopted. If the railway company concerned, for reasons other than as above, refuses to agree to the continuance of the exceptional rate or for a period of three months from the date of the application of such further period as the Tribunal may on application allow, fails to agree to the continuance of the exceptional rate, the person who has made the application to the railway company should be empowered to appeal to the New Tribunal for a declaration that the exceptional rate is not to be withdrawn, and the New Tribunal shall hear such appeal and if satisfied that there is substantial justification for the continuance of the rate, and that it is desirable that it should be continued, shall allow the appeal and direct that the rate is not to be withdrawn, subject however to the proviso, that no exceptional rate shall be continued which is greater than 10% below the corresponding class rate or has not been used during the year preceding the date when the new rates are adopted. A trader or railway company should also be entitled to apply to the Tribunal

to sanction the continuance of a rate smaller than 40% below the corresponding class rate. All exceptional rates not continued by agreement with the railway company concerned as above mentioned or not allowed on appeal to the New Tribunal should cease to be operative as from the expiration of two years from the adoption of the new class rates or such further period as the Tribunal may allow.”⁴

“ It should be understood that it is very desirable that exceptional rates shall as far as possible be upon similar lines, for example, with similar conditions as to quantity or quantities and whenever reasonably possible, should be expressed by percentage reductions from the standard rates. In this way they will be comparable with each other, and in course of time it may become practicable to classify or standardise such rates to a much greater degree than at present.”

We shall now proceed to discuss the influence that distance has in rate making. Normally, the short distance rate must be less than that for long distance; but, actually in practice, we find that the former is more than the latter. Technically there may be justification for this, since railroads work on the principle of diminishing costs and, therefore, as the distance increases the rates also must proportionately diminish. But because of that, no undue discrimination should be practised, and usually competition determines the conditions of rate making. Over the South Indian Railway for short distances under 75 miles a short distance charge of 3 pies per maund is levied in addition to the terminal charge. There is much scope for misuse of this principle, and the railways, on occasion, levy rates that are inequitable. The consequent difficulties of such a situation has led to the promulgation of the Long and Short haul clause in America and Canada. These arise

⁴ Quoted from “The Law and Theory of Railway Freight Rates”, p. 193.

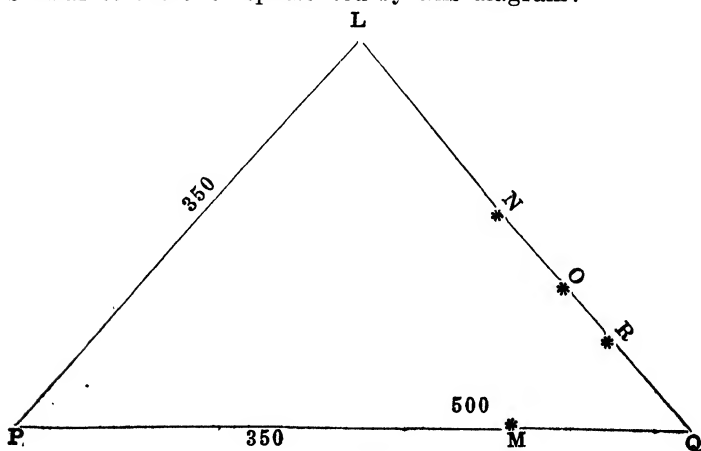
Road-Rail Transport

as a result of the physical configuration of the countries which are characterised by vast extent and the strength of water competition. The Great Lakes in North America have profoundly affected transportation rates and have led to the quotation of particular rates suiting local conditions which on examination would be found to be discriminatory in character. India too bears some resemblance to these countries, since it is also a land of vast distance; but here we have no system of inland water transport offering acute competition to the railroads; here coastal shipping has some influence necessitating the making of special port to port rates.

The Canadian Railway Act attempts to check abuse of this kind by laying down in Section 314, sub-section 5, that "the Board shall not approve or allow any toll, which, for the like description of goods, or for passengers carried under substantially similar circumstances and conditions in the same direction over the same line or route is greater for a shorter than for a longer distance, within which such shorter distance is included, unless the Board is satisfied that, owing to competition it is expedient to allow such toll." We have similar provisions in the American Railway Act. The beginnings of this clause could be traced in the early provisions of the Act of 1887 to regulate commerce which declared it illegal to charge a higher rate for a shorter haul than for a longer one when such haul was included in the latter, "under substantially similar circumstances and conditions." This clause was the cause of great controversy since it made it onerous on the part of any complainant to dispute the similarity of conditions. So great was the adverse criticism levelled against it that under the Mann Elkins Act of 1910 the clause had to be dropped out altogether. A second change was wrought in section 4 of the Act of 1887 whereby the Long and Short haul clause was made applicable not only to rate structures on a single railway but also to routes constituting several

lines, and, finally, it made it incumbent on a railway that lowered its rates on particular points which suffered from water competition to sustain such rates, and prevented it from raising them again unless the railway could prove conclusively that new circumstances had arisen justifying such an enhancement.

The Long and Short haul clause is to be found in its refinement in Section 4 of the Esch Cummins Act of 1920. The previous Act had put the responsibility of ascertaining the reasonableness of rates on the Inter-State Commerce Commission which was thus vested with discretionary powers of a far-reaching kind enabling it to rectify a number of anomalous situations that had arisen in the Southern States. The 1920 amendment laid it down that when a circuitous route is in competition with a direct and shorter route, the charge on intermediate points on the circuitous route should in no case exceed the rates chargeable for similar distances on the direct route. Diagrammatically it could be represented thus: Let PQ be the direct route between two points P and Q passing through the point M and PNQ the circuitous route passing through the points L, N and O. Let PN also be, by supposition, equal to PQ. Then, we will have a situation similar to the one represented by this diagram:—



Road-Rail Transport

Now then, since PLNQ is in competition with the direct route PNQ, it follows that the rate chargeable on the former should be the same as that on the shorter haul for the obvious reason that otherwise the traffic from P to Q would be diverted through M in order to avail of the lower quotation. But PN, *ex hypothesi*, is equal to PQ, say 500 miles, and PL it may be supposed is a distance of 350 miles equal to PM. It follows from this that the charges on these intermediate points must be equal. Thus by section 4 of the Act which makes it obligatory on the Inter-State Commerce Commission to charge similar rates “at those intermediate points on its line which are as near to destination as the Direct line is long”, the freight charge from P to L and N *ipso facto*, should not exceed the rate from P to Q and M respectively. Thus, if the freight rate on one maund of goods from P to M is Rs. 3-8-0, the freight on the same maund from P to L should not exceed Rs. 3-8-0 and the rate from P to Q, say Rs. 5, should not be exceeded by the rate from P to N since PN is the same distance as PQ. But for points between N and Q, say a distance of 200 miles, the rates from P must exceed the freight for PQ via M. Let O be a point 50 miles beyond N, that is, 550 miles from P via L and N; then according to the 1920 Act the rate for PLNO should in no case be less than the rate for PMQ. Since we have now taken the freight at one rupee per maund for every 100 miles, the freight charge for PLNO must be Rs. 5-8-0. This briefly, is what the section promulgates. Let us now push our analogy one step further and study the effects of competition on rate policy. We have presumed that NQ is a distance of 200 miles and that O is a point 50 miles distant from N; thus PLNO is more circuitous than PQRO by 150 miles. But R could be a point a hundred miles from N and this would also mean that it is a 100 miles from Q since NQ is 200 miles; that is to say, R is equi-distant from P whether it is via L

and N or via M. Therefore, at P the rate from P by either route must be the same since it is exactly 600 miles by either way, that is, it will be Rs. 6. But if S is a station 125 miles away from N then, though PLNS is a more circuitous route, the freight rate cannot be Rs. 6-4-0 for the distance PS via Q is only 575 miles (PQ, 500 plus QS, 75) and the freight by that route would be only Rs. 5-12-0. Thus at point R, the rate would be at a maximum, and it would be a matter of comparative indifference which route is chosen. This then is the manner in which competition plays a part in rate making.

The distance factor is important only in the case of local rates and shades into insignificance when through traffic has to be considered. It does not need much logic to show that in the case of countries of vast distances, the element of distance is completely out of the picture. Canada is a striking example of this and India is a hot second. The average length of haul of freight traffic in the former country is 341.6 miles and for the latter it is 246. The corresponding figures for South Africa, Great Britain, France and United States of America are 201, 55.64, 78.95 and 195 miles respectively (Figures refer to the year 1931-1932). This shows how geography plays a very important part in transportation. Norway is a mountainous country with a deeply fiorded coast so that the distance to be covered is not much and, in keeping with geographical control, the length of the haul is 48.04 miles which is the least in the world. It is thus seen that if the country is vast it would be inequitable to follow the rigid principle of distance in rate making. If that were done, then transportation costs would become prohibitive and traffic would not be forthcoming. We do not mean by through traffic long distance traffic. More commonly by that is meant traffic that passes over the lines of more than one railway administration. For example, if cotton is shipped

Road-Rail Transport

from Nagpur to Madras, then the shortest route would be the Grand Trunk route crossing Balharshah and Bezwada. In doing so, the freight would have moved on the lines of the G. I. P. Railway, the Nizam's State Railway and the M. & S. M. Railway. This, then, is an example of through traffic. Obviously the rates for through traffic will be proportionately less than single line rates, since here, the proportion of terminal costs to general transportation expenses would be less than what it would be in the case of a haul on a single line. The terminal expenses are incurred at the termini of the traffic and in the case of through traffic the number of terminal points would be just the same though, if the traffic were to travel over the length of line of each administration separately, the terminal points would no longer be two, but two multiplied by the number of the lines. There is one difficulty that has to be encountered in the case of through traffic. What is the basis on which a charge is made? The answer is not difficult since a 'joint rate' would meet the situation, but the real task lies in ascertaining what proportion of the joint rate should be allocated to the different railways concerned, and, here, though the principle of distance would immediately spring up to one's mind and meet fairly normal conditions, distance alone is no sufficient criterion. It might be that a haul of a thousand miles has to pass 200 miles of Railway A, 300 of B, and 500 of C. How then should the rate be allocated; assuredly not always in the proportions of 5:3:2. Blind *arithmetical* accuracy is no *modus operandi* in railway rates. Other factors have to be considered. The 300 miles of Railway B might be across hilly country where transportation costs, both initial and recurring, must be so high as to justify a higher proportion, or the 200 miles of A might be the length of a strategic line needing high costs for maintenance and upkeep. So, in the final analysis the rate proportion may not be 5:3:2 but

something different, say 5:5:5. It is always here that the greatest cause for dispute occurs, and it is the Railway Tribunal that is the ultimate arbiter in these issues.

The question of through traffic and the method of apportioning joint rates on Indian Railways is dealt with in Section 42 (4) of the Indian Railways Act of 1890. When a consignment offering itself for through traffic is forthcoming, the Railway on which it originates will have to intimate to the different railway administrations concerned the route to be followed, the amount of the traffic and the basis of apportionment of the joint rate. The various railways are expected to communicate to the forwarding railway their decision within the prescribed time, failing which, the rate will, *ipso facto*, come into operation, but, if any objection is raised, the case would have to be referred to the Rates Tribunal for arbitrament. "The Commissioners in apportioning the through rate shall take into consideration all the circumstances of the case, including any special expense incurred in respect of the construction, maintenance or working of the route, or any part of the route, as well as any special charges which any railway administration is entitled to make in respect thereof." ⁵ "(h) The Commissioners shall not in any case compel any railway administration to accept lower mileage rates than the mileage rates which the administration may for the time being legally be charging for like traffic carried by a like mode of transit on any other line of communication between the same points, being the points of departure and arrival of the through distance." ⁶ Subject to these provisions the Railway Commissioners are vested with the most complete powers of deciding the justifiability of through rates and the constituent proportions thereof.

The following figures will serve to exemplify the principle of joint rates for continuous or through traffic.

5 Indian Railway Act 1890, Chapter V, Sec. 42 (4).

6 *Ibid.*, Section 42 (4) h.

Road-Rail Transport

The commodity chosen is cotton and the rates are for piecegoods, cotton in bales, press-packed and bound with iron bands or packed in boxes or cases from Karachi to the following stations. The freight per maund of cotton carried at owners risk under risk note from B or II from Karachi to Cawnpore Collectorgunge via Hyderabad (Sind) and Kachaman Road was in July 1932, Rs. 2-6-4. The freight had to pass over the lines of the North Western Railway, the Jodhpur Railway, and the Bombay, Baroda and Central India Railway, the proportionate shares of which in the rate were Rs. 0-4-5, 1-1-7 and 1-0-4 respectively. Similarly, the rate from Karachi to Lucknow via Hyderabad (Sind), Kachaman Road and Cawnpore Central Goodshed at railway risk was Rs. 3-4-11, and in this case four railways were involved *viz.*, the North Western, the Jodhpur, the B. B. and C. I., and the East Indian Railways, the respective shares of which were Rs. 0-5-8, 1-6-8, 1-4-10 and 0-3-9.

From the foregoing examples it is obvious that the through rate is a simple addition of the rates chargeable on each line for the actual distance travelled thereon. Though in strict theory such a procedure could not be found fault with, it would be really a desirable thing if the continuous mileage principle were adopted in the case of through traffic. It is a pity that in India almost all rates are made on the principle of equal mileage; the conference maund schedule rates being the only important rates quoted on a telescopic basis. It is an axiom that railways are always subject to the law of diminishing costs and that, as a consequence, the longer the haul the less must be the rate. But there is a real difficulty when through traffic has to be considered for, then, the special minimum distance conditions of each railway may prove a stumbling block in the declaration of such rates. Nevertheless, the need for such a form of rate quotation can hardly be emphasised too

much particularly in a country like India where freight traffic forms such an important part of railway revenue. The Statistical table in the Appendix,⁷ summarising Passenger and Goods Revenue, gives a clear picture of this. The largest volume of goods carried in any single year was in 1930-31 when 110,643,000 tons were carried and the least was 70,601,000 in 1932-33 when the effects of the depression were at the worst. But the earnings reached a maximum for the pre-depression year 1928-29 when it was Rs. 71,15,55,000 and earnings were lowest in 1932-33 when they fell to the figure of Rs. 56,88,85,000. The average length of haul of a ton of goods has been fluctuating round about the figure of 240. This is an important point to be borne in mind, and it argues most tellingly for the adoption of a telescopic basis of rates. India is a land of vast distances and she has a peculiarly unindented coast-line which has proved fortunate to the railways since they suffer from no coast-wise steamer competition. Inland water transportation is, likewise, too weak to offer any serious cause for apprehension; the only possible competitor now probably is the road motor vehicle but, even here, the sphere of competition is very restricted, it being within about 50 miles. As such, one can find no better argument for adopting the continuous mileage principle. It must, however, be admitted that there are a plurality of railway companies operating in this vast sub-continent; but, since the vast majority of them, at least the most important ones, are under state ownership, even this objection loses force. When through rates are quoted on the basis of cumulative mileage, then, there would be a substantial reduction in the rate chargeable, and this would ultimately reflect itself in increased goods revenue earnings. Under such a system each railway would charge its own rates on its own distance, but *pro rata* on the continuous

⁷ *Vide* Appendix A-7.

Road-Rail Transport

mileage. Mr. Srinivasan⁸ has pointed out, how with a dictionary of distances and a ready reckoner it would be easy for any shipper to know beforehand the rate he would be charged for the distance he intends sending his freight and how this would obviate the frequent publication of rate schedules which are the bugbear of the commercial classes and the eyesore of the goods clerk.

Distance by itself can be no sufficient cause for the declaration of specially favourable rates. A factor of equal importance, if not more, is that of volume. The Railway Manager would always be more pleased to get larger consignments than to get a fewer consignments though moving over a great distance. He would, in short, be interested not so much in the average length of the haul as in his net revenue earnings. Thus, if for example, a merchant at Chidambaram approaches the South Indian Railway with a request to quote special or exceptional rates for the rice that he exports, the Railway would first like to know what quantity of traffic he would be able to offer. In such cases, it is usual with the merchant to give an exaggerated figure so as to better his chances of preferential treatment. Probably, he might suggest that in the space of a given period, say a year, he would be able to ship 50,000 maunds of rice. The Railway would in the first instance quote a particular rate and, if at the end of the stated period he is able to book the specified quantity or a good part of it, then the Railway would consider the case and charge the traffic at a less rate and pay back the shipper the difference in the shape of a rebate. Thus, what determines the extent of preference in all such cases is the volume of traffic. This also explains the reason for the quotation of lower rates on full wagons than on loose consignments of less than wagon load. While in America

⁸ K. C. Srinivasan: *The Law & Theory of Railway Freight Rates*, p. 402.

Rate Making in Practice

special rates are quoted for traffic moving in car loads, the Inter-State Commerce Commission, nevertheless, refused to offer special rates when traffic moved in trainloads. When the Saint David's Sand Company of Canada asked for special treatment the Board categorically affirmed that "it has been recognized in the actions of rate regulative tribunals, both in this country and in the United States, that, while it is justifiable to base rate differences on quantity as between less than carload and carload movements, it is not justifiable to make a difference in rate based on the distinction between carload and trainload quantities."

It is this volume factor that explains largely why rates on branch lines should be higher than those on the main line. The very fact that a branch line is opened out means that the volume of traffic offering thereon would not be very considerable and, as a consequence, since the physical costs of operating a branch line would be as high as on a main line, the freight rate must be higher. On a branch line the number of halts will have to be longer, since each train must stop at almost every station, the density of traffic would also be less than what it would be on a main line and, since there would normally be only a single line, shunting operations entailed in laying off and taking on wagons and cars would be more prolonged, necessitating the employment of more gangmen and engine drivers. Moreover, over a branch line traffic may sometimes be one way, that is, traffic would be moving in a single direction and, therefore, cars would have to return empty on the return haul. For example, the branch line between Dindigul and Pollachi is a distance of 76 miles. Its importance lies in the fact that it connects up the main line on the metre gauge with the broad gauge line at Coimbatore and links up with Palghat via Olavakkot. It thus taps up an area that has no adequate

Road-Rail Transport

transport facilities, and even here freight traffic has a tendency to move from Pollachi rather than to Pollachi. As an example of an uneconomic line we have the Cuddalore-Vriddhachalam branch line which is so unremunerative that it has been included in the list of branch lines that are to be scrapped.

Nevertheless, there is a belief that branch lines ought to be constructed in backward districts so as to offer traffic facilities at a low rate. The whole issue has been very well stated by Sir William Acworth whom we quote: "We often hear it said that light railways ought to be constructed in poor agricultural districts because, being cheaply built, and so having a small capital per mile on which to earn interest, they would be able to afford to carry traffic at rates below those charged by the ordinary railways. The truth is: the fact that it is necessary to give artificial encouragement to the construction of such lines implies that there is little prospect of their carrying anything but light traffic; that, therefore, the capital charge, though absolutely light, will be relatively heavy, for it will need to be borne by only a few contributories."⁹ And again, "two practical conclusions from the above may be noted here. If it is necessary for a light railway to be built independently, it ought to be permitted to charge rates and fares very much in excess of those which would be reasonable on main lines. Secondly, the proper people to build light lines are the main line companies with which the light lines connect, for they obtain from the construction of a new branch an accession of new traffic, which, while contributing to the remuneration of the old main line capital, does not as a rule imply any expenditure on that line of new capital for its accommodation."¹⁰

⁹ Sir William Acworth: *Elements of Railway Economics*, p. 20.

¹⁰ *Ibid.*, Footnote, p. 20.

This inevitably leads us on to the great question of competition in transportation. Competition is the very soul of business and without a certain measure of it society must stagnate; but the evil of excessive or uneconomic competition has also to be guarded against. In transportation, competition may take a number of forms; on the same railway there may be competition between two routes a 'differential' or circuitous route and a direct route. In a previous paragraph* the economics of such route competition has been dealt with in explaining the long and short haul clause. There may be a second kind of competition as between competing railways as is amply evidenced in Canada where the Canadian Pacific and the Canadian National Railways run parallel to each other almost their entire length. Surely, one cannot understand the sagacity of those people who were responsible for the laying of such parallel lines. Public money must be preserved as a sacred trust and should not be dissipated in such wasteful duplication of railways. All unnecessary duplication of services is condemnable, particularly railways, since the capital expenditure in laying a line is prodigious. The only reason that seems to have prompted the Canadian pioneers to allow of such construction was that that was the only manner in which the tyranny of monopoly could be got over. One can well understand the need for some check on unrestricted rate making powers, but that should not be sought at such a high cost. Apart from competition between railroads, there may be competition between road and rail which has assumed a peculiarly acute form in the south of India. Much of such competition is due to the unpractical manner in which road traffic has been routed. It passes one's comprehension how road motor vehicles could be allowed to compete on routes exactly parallel to the railways for fairly long distances. In the Madras Presidency the route from Bellary to Kottur of 56 miles,

* *Vide p. 83 et seq.*

Road-Rail Transport

the Bangalore-Hindupur route of 63 miles and that between Madras and Vellore of 82 miles are a few of the long distance routes operated by motor carriers. At present, competition is confined to passenger transport and in a small measure to goods traffic. On the South Indian Railway there is freight competition by road lorries within a range of about fifty miles, and the Madras-Wallajahbad route of forty and a half miles is one of the longest routes operated. To meet the competition of road traffic the South Indian Railway has been forced to lower its fares; for example, the fare from Madura to Dindigul on which section competition is rife has been reduced to seven annas. South of Madras, the districts worst affected by motor bus competition are Coimbatore, Trichinopoly and Tanjore. In the State of Travancore, transport conditions were chaotic until the State took up the monopoly of motor bus transport on the main trunk route from Trivandrum to Cape Comorin. It is in these districts, that we find the South Indian Railway devising ways and means to compete with the road pirates. Trichinopoly to Dindigul is a distance of 58 miles and the fare is only ten and a half annas, while the fare from Chidambaram to Cuddalore (New Town), a distance of just 26 miles, is eight annas. Similarly, the third class fare from Trivandrum Central to Punalur at the beginning of the Ghat section and a distance of 69 miles is only twelve and a half annas. These are only a few figures taken just to illustrate the effect of road competition on railway rates. A more detailed investigation of this question will be made when we come to the specific subject of road transport and the question of transport co-ordination.

Unrestricted competition is a vice that has got to be guarded against in all forms of business, particularly in transport. In the competitive struggle for traffic the railways are always at a disadvantage. High capital costs

have to be met and the overhead administration expenses which come to 15·03 per cent of the general working expenses have got to be met. The interest charges on capital itself came to the colossal figure of Rs. 31 crores and 39 lakhs, 30 crores and 82 lakhs, and 29 crores and 26 lakhs for the years 1935-36, 1936-37 and 1937-38. This apart, the railways have to contribute a large sum towards the general revenues, and in 1930-31 it was Rs. 5 crores and 74 lakhs. Since 1930, consequent on the depression and the concomitant fall in railway receipts, the contribution to general revenues had perforce to cease, and it is only now that the railways have been able to register a positive surplus. Thus, many restrictions have been placed on Indian railways, literally cribbing, cabining and confining their powers of free action. It would be in place to remark here that the average receipt per ton mile for Indian railways for 1931-32 was 0·832 cents and the average haul was 246 miles. Out of the 23 countries for which figures were compiled in the 'Railway Statistics of U. S. A.' for the year 1933, the only other countries whose average receipt per ton mile was less than that of India were Poland and Japan with 0·80 and 0·63 cents respectively. Similarly, the average receipt per passenger mile for India was 0·451 cents and that for Japan, ranked last, 0·43. The highest receipts were gained by the Canadian Railways *viz.* 2·543 cents.¹¹

Financially, therefore, the railways cannot compete on equal terms with the road haulers. Their high capital costs themselves have a large share in raising rates and fares. This apart, there is fixity with regard to the routes and area operated. A pair of lines once laid permanently fixes the sphere of railway operation, whereas, the highway vehicles are free to choose any route. Railways in this respect share the characteristics of canal and

11 "Railway Statistics of United States of America" 1933.

Road-Rail Transport

river navigation but, since it costs the boats nothing to maintain the canals and rivers, apart from taxes and tolls, inland water transport resembles highway transportation.

Market competition and competition of transportation facilities are inseparable. It is the conditions that prevail in the market that reflect themselves in the sphere of transport. Much of the competition that exists in the former is due to the grant of rates to commodities so as to suit their needs and to meet the particular conditions that call for adjustment. Thus, it would almost be a fallacy to say that transportation concerns make rates; what they do is to adjust rates. Mr. Jackman in his highly interesting book cites in illustration of this the interesting dispute with regard to the sugar rates in the United States of America.¹² There are large numbers of refineries in America: the San Francisco refineries on the West coast drawing their raw materials from the Sandwich Islands; the refineries of the Atlantic coast using raw sugar from Cuba and the West Indies, and the sugar plants around the Gulf of Mexico depending on the product from Mexico and the South. All these, in their turn, it appears, were in competition with the refineries in the interior which were using beet sugar available locally. The Pacific Coast refineries were apportioned a particular territory by the Inter-State Commerce Commission for their sphere of operation. These refineries grew from strength to strength until they were able to ship their sugar to New York and the great cities on the east coast by way of the Panama Canal and thence to Chicago through the Great Lakes and the Erie Canal. The water rate for transportation from San Francisco to Chicago was 59.75 cents per 100 pounds, while the all-rail rate was 84 cents. Similarly, the water rate from San Francisco to St. Louis in the Mississippi valley was 67 cents for 100 pounds, while the rail rate

12 *Vide* "The Economic Principles of Transportation."

was 84 cents. Naturally, in order to be able to draw a fair share of this traffic that was going coastwise, the transcontinental railroads requested the Inter-State Commerce Commission to permit them to lower the rates from San Francisco to Chicago and St. Louis to 65 cents and 67.5 cents respectively. If that were granted, then the railways could be sure of tapping a good part of the traffic offered by the Pacific Coast refineries. But such a procedure would have proved detrimental to the interests of the refineries of New Orleans and others on the Atlantic Coast; that would only increase the competitive strength of the Pacific sugar and so they rightly opposed such action. While those immediately interested in the dispute were the rival refineries, the ultimate interested parties were the suppliers of raw materials, *viz.* Hawaii, Cuba, etc. Thus, no decision could be taken without taking into consideration these conflicting interests, and all this proves the delicate balance of the rate structure and shows how the railroads are used by the competitors as instruments for business purposes.¹³

Competition need not necessarily be restricted to parallel lines or to one form of transport with another on competitive routes. There may be in addition competition between directions. A particular place, say Tanjore, may serve a number of places and export rice to the ports of Madras and Tuticorin. Madras is 222 miles distant from Tanjore, while the latter place is very nearly the same distance from it, *viz.*, 226 miles. Both these ports are in competition with each other so much so the freight rate to either place has got to be the same, else, traffic would get diverted from the costlier to the cheaper direction. A similar situation is illustrated by the competition of

¹³ Inter-State Commerce Commission 448, Sugar cases of 1922 cited by Jackman: *Economic Principles of Transportation*, pp. 388-390.

Road-Rail Transport

North Carolina and New England for the cotton of Georgia and the movement of California peaches to Portland or Colorado. There may be another type of competition: that between different markets for the produce of a single producing centre or between different producing centres for a particular market. Jackman gives the rates on coal coming into Canada from the United States as an example of market competition. It would appear that Canada is supplied coal from 18 different places in Ontario, New York, Quebec and Vermont. All these different centres were in competition with each other for the Canadian market, so that the coal freight rates were so framed as to be adjusted with each other.

Competition may, hence, ultimately lead to blanketing of rates; that is to say, if there are a number of competing centres for a particular market, then all these places may be blanketed together so as to form one group and a common rate quoted for them. Such a system is particularly desirable when the area chosen for such treatment is one of natural resources. "It has long been a general practice," said the Inter-State Commerce Commission in its report of March 19, 1924, "throughout the United States to establish rates on a group or zone system, that is to say, by making the same rate or rates from or to all points within a certain group or zone, which usually apply over all routes. This is the system which is now employed in publishing rates between eastern points and the Pacific Coast. The territory lying generally east of the Rocky Mountains is divided into a number of large groups and the rates from all points in each of such groups are generally the same to all points in California. A similar plan is followed in publishing rates between points in Central territory and points in trunk line and New England territories. The method of stating rates is simple and convenient, and in some cases is of great advantage to the public at large, where it is desirable to maintain

the producers of the same territory on a substantial equality in marketing their products. This is true of large industrial centres such as Chicago, Pittsburgh, St. Louis and others, which in many cases are grouped with the territory immediately surrounding them for rate making purposes. Often the rates to and from points within the sweep of a long radius from these centres are the same, generally speaking, over all routes.”¹⁴

In the preceding cases it has been found that the railways usually tend to equalise transportation costs by nullifying the effects of competition. It is always in the interests of the railways to nurse traffic by declaring favourable rates for specialised types of traffic and to declare group rates when the conditions so necessitate it. Unfortunately in India, we have not followed any policy of blanketing rates; that seems to be the special feature of American rate policy. What applies to America could very well apply to India, since both of them, from the transportation point of view are closely akin, and the adoption of this practice would be of the utmost value to the economic prosperity of this country. Though railway companies accommodate themselves to such situations, they are not bound to adopt such a policy. The ultimate persons who are to determine this policy are the railway administrations concerned and no extraneous influence should be brought to bear on them. In America and Great Britain, therefore, the railways are given full powers to declare such rates as they think best; and neither the shippers nor the Railway Tribunal are empowered to force them to meet the conditions of competition. The English Railway Rates Tribunal aver that “when the railway companies declare that in their own interests they cannot grant such facilities or reductions in rates, it would not be right for this court by its order to compel them to

14 165 Inter-State Commerce Commission 561, 571, 1930.

Road-Rail Transport

adopt such a course of business unless the applicants satisfy the Court that the railway companies are mistaken in believing that such course of business will result in loss of revenue.”¹⁵ Dagget cites some interesting cases as examples. In 1917 Alabama and Tennessee asked for a reduction of freight rates on pig iron since their competitive position, as compared to others in Eastern and New England markets, was low and that a substantial rate reduction would be to their benefit. Similarly, in 1916 the mills of Loana, Wisconsin, asked for lower rates on lumber since they suffered from competition from mills located on the western shore of Lake Michigan. In neither of these cases did the Inter-State Commerce Commission intervene since it failed to believe that it was incumbent on it “to equalize commercial conditions or to neutralise geographical advantages.”

In actual operation the railways help a great deal quoting favourable rates for particular commodities, and it is in the declaration of such commodity rates that the greatest discrimination takes place and disputes regarding undue preference arise. Nevertheless, in certain cases the Railways are empowered by fiat to exercise preference in respect of certain commodities. The United States of America passed the famous Hoch Smith Resolution of 1925 whereby the railways were asked to quote special rates so as to assist depressed industries, particularly agriculture. Needless to say, this needs the greatest caution since, in trying to offer a fillip to particular commodities, the railways may err on the wrong side and set up new conditions of competition that would be no improvement over the previous ones. Nor can distance and cost be entirely disregarded in such rate quotation. Philanthropy can find no place in business, least of all in railway transport, where the capital costs themselves account for a

15 XVIII Railway Canal cases, 95, 113.

great part of expenses. The degree to which special business conditions enter as a factor in rate making is only relative as there can be no absolute disregard of them. It is competition that finally determines the exact extent to which the rates should be manipulated to meet the requirements of demand, and this demand for transportation, let it be reiterated, is not fundamental; it is not like our demand for necessities.

Preferential treatment need not necessarily take the form of lower rates, it might take a variety of forms. The simplest way is to allocate the commodity to a lower rated class. Now, raw half-pressed cotton is classified in the sixth class at Railway Risk, the maximum rate for which is .83 pie per maund per mile and the minimum .166. If raw cotton from a particular place is to be afforded special treatment, then, the railway could do so by placing it in a higher class, say class 5, for which the maximum and minimum are 0.77 and 0.166 pie respectively. This could easily be manipulated by changing the conditions of package and such other details so as to hide their real character. Yet another device which needs little thought is underweighting. The railways could wilfully credit a consignment with a smaller weight so as to give it the benefit of a smaller cost. But the most puritanical method of achieving this is through "midnight" freight rates. Under this, specially favourable rates are declared in the usual manner so as to be applicable to all, but the conditions of grant, such as time and quantity of the shipment and section over which the rates are to come into force, are so circumscribed as to suit the particular needs of the traffic intended to be helped. This procedure has the merit of muzzling all opposition since, technically, no discrimination is practised. The usual device sought is that whereby rebates are granted to favoured customers for offering traffic to a particular line. The extent of

Road-Rail Transport

undue preference depends upon the relative strength and importance of the customers. Thus, as Mr. Srinivasan¹⁶ points out, the Standard Oil Company of New York which was the most important customer of the Cincinnati Marietta Railroad was granted a special rate of 10 cents per barrel of crude oil on a particular section of line, and what was more astounding, the excess of the receipts from other shippers over a ten-cent rate was handed back to the Standard Oil Company as a gratuity. The relevant sections of the Indian Railway Act with respect to undue preference are as follows:—

Section 42 (2) of the Indian Railways Act of 1890 specifically lays down that “a railway administration shall not make or give any undue or unreasonable preference or advantage to or in favour of any particular person or railway administration, or any particular description of traffic, in any respect whatsoever, or subject any particular person or railway administration, or any particular description of traffic, to any undue or unreasonable prejudice or disadvantage in any respect whatsoever.” Section 43 runs as follows:—(1) “Whenever it is shown that a railway administration charges one trader or class of traders, or the traders in any local area, lower rates for the same or similar animals or goods, or lower rates for the same or similar services, than it charges to other traders or classes of traders, or to the traders in another local area, the burden of proving that such lower charge does not amount to an undue preference shall lie on the railway administration,” and (2) “in deciding whether a lower charge does or does not amount to an undue preference, the Commissioners may, so far as they think reasonable, in addition to any other considerations affecting the case, take into consideration whether such lower charge

is necessary for the purpose of securing, in the interests of the public, the traffic in respect of which it is made.”¹⁷

The Acworth Committee refers to the Broach Case as an example of discriminatory treatment in India. It would appear that in virtue of its being a port a hundred miles from Bombay, there was some considerable traffic by water which offered competition to the Bombay Baroda and Central India Railway which linked up Bombay with Broach by land. The competition of the steamers was perfectly within limit, but the company, finding some diversion of traffic, used its superior influence with the Railway Board to enable it to quote rates that killed the steamer traffic. The classification of the commodities subject to competition was raised and the Railway Company's power of quoting rates was increased fourfold, and there was scarcely anything left over for the steamers. This was iniquitous enough, but what was worse is that the rates continued despite the fact that the competition was killed, and the cries of protest grew so great that the Government had to interfere and put a stop to the Company's powers of changing the classification for certain goods. This instance is sufficient to show how powerful companies can stifle small concerns out of existence, and the unjust manner in which British owned lines checked the growth of Indian Coastal Shipping Concerns is still fresh in our minds.*

The foregoing is an example of local discrimination; but discrimination may be of three sorts—discrimination between localities, discrimination between persons and discrimination between commodities. As an instance of the second we have the famous case of the Grain Merchants of Ajmere versus the Bombay Baroda and Central India

¹⁷ The Indian Railways Act. 1890. Chapter V.

* See “Coastal Shipping in India” by Dr. B. V. Narayana-swamy Naidu: I.J.E., Volume xvii.

Road-Rail Transport

Railway which was the first report of the Railway Rates Advisory Committee to be published. The complaint was that, in 1926, the Railway Company extended preferential treatment to the B. B. & C. I. Railway Indian Cooperative Association at Ajmer by granting the rate of 0.10 pie per maund per mile to the Association. The contention of the Railway was that the members of the Association were all employees of the Railway and that only its own men stood to enjoy the benefits of such treatment and that, in consequence, the company was not exercising any discrimination that could possibly come under the meaning of Section 42 of the Indian Railway Act of 1890. The complainants, however, averred that some 50,000 people stood to benefit by this preference out of a total population of about 113,000 in 1926. The Association, it would appear, was started as a thrift society intended to help the employees and their dependents, most of whom drew a salary of Rs. 30 and less. The principal articles dealt with were wheat, barley, bajra, gram and pulse, jaggery and sugar, and the gross purchases for the year ending March 1926 was over Rs. 23 lakhs and the amount of preference actually shown on the traffic in 1926 was Rs. 45,211-13-0, that is, the difference in the freight actually paid at the preferential rate and that payable at the rate available for the general public. As a consequence, the complainants added, the grain merchants suffered severe loss of custom amounting to nearly Rs. 4.5 lakhs in 1925-26. They further contended that the Association was functioning like any other private trader selling to people other than the railway employees and that as the vast majority of the beneficiaries were not low paid employees, the Association failed in its ideal of "the promotion of thrift and economic interest, encouragement of self-help and cooperation amongst its members and to raise funds for providing all daily necessities of life at the lowest possible rates."

The Tribunal went through the conflicting evidence with the greatest care and the utmost dispassion. It admitted that the Association was doing some good service to its employees and that it was doing this in just the same way as giving a bonus. But the bone of contention here was, not whether the Association conferred some real good or not but, whether the Railway Company was entitled to enter the field of business either directly as a trader or to assist any trader in competition with others. The Tribunal categorically asserted that they failed to conceive this as one of the functions of a Railway Administration and that it was contrary to the meaning of Sections 42 and 43 of the Indian Railway Act. It also stated that from its perusal of the price lists of the sixteen merchants who constituted the complainants there was nothing to suggest a combination whereby high rates could be charged to the public, thus necessitating the railway to step into the breach and protect its employees from any profiteering. It believed "that the natural competitive forces obtaining in Ajmere market do not require to be supplemented to enable the public to obtain their food supplies at fair normal market rates" and that by artificially aiding the Association the Railway was practising unjust discrimination. The learned judges found that such preference led to grave loss to the merchants and that, what was most important, this preferential treatment did not result in any increased revenue to the Railway Company since the traffic was certain to come forward whether it was offered by the Association or the grain merchants. On all these counts, therefore, the Committee found itself in sympathy with the grievances of the Grain Merchants of Ajmere and recommended that the preferential treatment should be discontinued.

We have now examined cases of local and personal discrimination, but far more important than these is

Road-Rail Transport

discrimination between commodities. It is here that the railways can make or unmake prosperity by quoting either favourable or unfavourable rates to particular commodities. Certain types of favourable treatment are recognized as legitimate, and low rates for agricultural and mineral commodities are quite desirable so much so, that even governmental pressure is brought to bear upon the transportation agencies in case they fail to do so of their own volition. Nevertheless, there is a type of discrimination which does not come within the bounds of legitimacy and has to be deprecated as such. Glaring examples of this are to be found on almost every railway, and American railway history bristles with many examples. But sometimes, what may appear to be undue preference may not, on closer enquiry, prove to be so. Jackman cites the case of the Marshall Ventilated Mattress Company which specialised in the production of spring mattresses. The complaint was that in 1928 its products were classified as 1½ t. 1, whereas high grade felt mattresses of competing firms were placed in the first class. They said that such differential treatment was unfair from every point of view, value, weight, cost of service or liability to breakage and that therefore such discrimination should be put a stop to. Actually, however, it appeared that the products of this firm had to be packed in rectangular crates necessitating the occupation of greater space and entailing greater trouble in handling and loading, while the felt mattresses were easily packed and portable, and, what was more important, the price comparison which the complainants instituted was of no value since the comparison was between the lowest priced spring mattresses and the highest priced felt mattresses. The railway classification was therefore upheld as equitable. The general complaint in India is that port to port traffic is favoured and fostered at the sacrifice of inland upcountry traffic. Personally, one feels that such favourable rate

quotation from port to port is not altogether condemnable. The prosperity of a country depends to a large extent on its international trade so that only if some fillip is given in the shape of lower freight rates could our goods compete better with foreign goods. Nevertheless, the internal trade looms largest in national economy and this is especially so in the case of India where the internal trade is much greater both in volume and value than international trade. As a consequence, any wanton discrimination exercised as between inland trade and port to port trade is highly derogatory to national interests. But, in the absence of this motive, one finds no reason why external trade should not be encouraged.

Lastly, discrimination may be exercised with regard to distance. The Indian Railway Act is conspicuous by its omission to incorporate this principle. On the American system, the distance factor is given due weightage and the long and short haul specially lays down that for substantially the same service under the same conditions the charge for a shorter haul shall in no case exceed that for a longer one. Section 27 (3) of the English Act of 1921 makes this point quite clear by stating:—"The Court or the Commissioners shall have power to direct that no higher charge shall be made to any person for services in respect of merchandise carried over a less distance than is made to any other person for similar services in respect of the like description and quantity of merchandise carried over a greater distance on the same line of railway." The importance of such a clause can be hardly emphasized too much, and the need for inclusion of this in our Act is necessary. It is around this question that a lot of controversy has ranged and the following English case of *Budd versus London and North-Western Railway*, will serve to illustrate this.* The complaint was brought forward by

* Quoted from Dagget: *Principles of Inland Transportation*.

Road-Rail Transport

certain tin plate manufacturers in the district of Ystalyfera which was served by a private siding connecting the North-Western Railway. Swansea which was further 12 miles south of Ystalyfera was linked up with Liverpool by the North-Western. Both the tin plate manufacturers shipped their products to Liverpool and while a rate of 12 shillings was quoted to the Ystalyfera manufacturers, a lower rate of 11 shillings and 4 pence was quoted for the Swansea shipper despite the fact that the haul in this case was longer by 12 miles. The reason for this was that Swansea being a sea port town, the North-Western suffered from competition by coastal shipping concerns and that they had therefore to quote a lower freight rate if they were to nurse the traffic and to prevent it from taking to the water route. Thus competitive conditions were here responsible for the nullification of Section 27 (3) of the Railway Act of 1921. The long and short haul clause is to be found in its perfection in American and Canadian railway practice, and it is there that the reports of the Inter-State Commerce Commission are brimful with such cases. Such instances just serve to illustrate the great truth that practice in this work-a-day world must differ from precept.

Summary. In this and the preceding chapters the theory and practice of railway rate making have been investigated into. In the last one, the various principles on which rate making is done were referred to and an analysis made of railway costs. There, it was seen how railway expenditure is largely joint, and that it was highly difficult to find out the actual costs of operation and to allocate them to particular forms of traffic. Thus, it was seen that the cost of service principle was largely of theoretical importance and that what could be actually measurable was the 'extra cost' incurred in moving certain shipments. In the absence of a better principle, recourse was had to this

principle in conjunction with that of the value of service which fixed the higher limit of chargeability. In the order of excellence the value of service principle came first, since it was the only equitable method approaching nearest to taxation. In this chapter the pitfalls that beset the Rates Manager have been examined and the difficulties of his task expounded. It was pointed out how the very first difficulty was one of classification and how herein much mischief could be done by wilful mis-classification. Then, a study of rates was entered into. Schedule rates were first taken up for consideration followed by class rates and station-to-station rates. Wherever possible, examples of these were given. Exceptional rates were next examined, and it was seen how they are largely *developmental* or *missionary* rates intended to accord just and favourable treatment to particular industries and commodities. The importance of distance and volume of traffic was referred to. The Long and Short haul clause was explained and it was made obvious that they are of importance only in the case of local rates. "Given similarity of conditions without any special circumstances which create differences, it follows in general that rates for equal mileages may be compared, but it is seldom the case that all the conditions are so much alike that distance can be used as a measure of comparison or of discrimination." After discussing the role of distance, we next took up competition and saw how powerful it is in the quotation of rates. So great is its potency, that all other factors have to be subordinated to its regal importance, and this question was studied in all its aspects: competition between different routes on the same line, competition between different railway companies, competition between railways and other forms of transport and finally competition between shippers. It was seen how unrestricted competition was pernicious in its effect and should, therefore, be checked, and how great the need was for a due co-ordination

Road-Rail Transport

of these means of transport. Lastly, the question of discrimination was taken up, and it was found how discrimination could be effected; local, personal, distance and commodities. All along we have found that rate making is hedged in on all sides by influences which only go to show that economics is a social science. There can be nothing hard and fast about our rules; the laws of economics have not that exactness of the physical sciences. The practical economist or businessman cannot go about his business with the set-square and the plumb line of the engineer and claim mathematical accuracy for his deductions. He has always to remind himself that economics is a human science. The transportation officer has, therefore, to keep his mind and ears open and to adjust his theories to suit the conditions; here, for once, practice and precept must run on parallel lines. In short, railway rates are purely empirical, subject to change, and they have got to harmonise with the general economic conditions. The purveyors of traffic are as much interested in their customers as the customers are themselves, since their prosperity alone would ensure the prosperity of the transport agencies. Viewed thus in its true perspective, the problem of railway rates becomes a highly interesting subject and the foregoing pages must have, in some small measures at least, indicated how intricate it could be at the same time.

CHAPTER IV

FREIGHT RATES—A STUDY

Introductory. The economic prosperity of any country very largely depends upon the existence not only of adequate transport facilities but also a just and equitable freight rate structure. In this mission of development there is probably no single agency more potent and capable of both good and evil than the railways. These by themselves can, by regulating their rate policy, accelerate or retard the progress of industries; more so, in a country like India which depends almost upon the railways for carriage of both internal and external trade, and when it is borne in mind that the value of the sea-borne trade reaches the colossal figure of Rs. 391 crores¹ the vast influence of the railways as an engine of economic progress is realised better. It is not only the preservation of the heritage of the past that is the function of all states, but also the active enhancement of that so as to leave to posterity a rich legacy of economic values; and in this politics no less than economics dictates policy. The whole idea has been brilliantly conceived by that father of political wisdom—Burke, who says in his characteristically forcible style, that “in their political arrangements, men have no right to put the well-being of the present generation wholly out of the question. Perhaps the only moral trust with any certainty in our hands is the care of our own time. With regard to futurity, we are to treat it like a ward. We are not so to attempt an improvement of his fortune as to put the capital of his estate to any hazard.”² While the veracity of the second statement cannot be gainsaid, we need not be bothered about the third statement since Burke was speaking only about

1 Review of the Trade of India, 1937-38, p. 183.

2 Edmund Burke: An Appeal from the New to the Old Whigs. Burke's speeches and writings. Vol. 5, p. 19.

Road-Rail Transport

political institutions, and living as he did in the time of the French Revolution there was grave danger of monarchy going into the melting pot. "We, here in India, would be glad enough even if we could preserve the heritage of the past without aiming at any method of improvement at the sacrifice of the present. While the history of all countries has been progressive, ours has been less so. We have lost our position of economic leadership in the comity of nations. The Indian Industrial Commission rightly remarks, "At a time when the west of Europe, the birthplace of the modern industrial system, was inhabited by uncivilised tribes, India was famous for the wealth of her rulers and for the high artistic skill of her craftsmen. And, even at a much later period, when merchant adventurers from the west made their first appearance in India, the industrial development of this country was, at any rate, not inferior to that of the more advanced European nations." ³ What mystery then surrounds our downfall, what causes paved the way for our ruin, and what impediments hinder our path in the achievement of our betterment? The reasons are not far to seek; they have been mainly, if not purely, economic. Suffice it to say, that the downfall of the Moghul Empire and the ensuing anarchy in India put a sudden stop to the demand for skilled workmen; art ceased to find value and, therefore, languished, and the trading company that stepped into the breach created by the dethronement of the last of the Moghuls was impervious to the needs of the country and looked on the gradual decay of the native arts and crafts with studied indifference. To deal at length with the policy of the East India Company would be beyond the bounds of this chapter, since it would have perforce to be an essay in economic history. What we are here interested in knowing is not so much the causes for

3 Report of the Indian Industrial Commission 1916. p. 1.

our economic backwardness as the method and policy to be adopted if we are to attempt our regeneration. Needless to say, a careful diagnosis has to precede any prescription of means to be adopted, just as the physician makes a thorough preliminary examination of the patient before he can give him a specific for cure. It is with that end in view that a study of important railway freight rates has been undertaken.

Our position is rather anomalous. We are primarily an agricultural country with an almost unlimited scope for expansion. Viewed that way, we do not seem to have progressed at all; on the contrary, with the ruin of our arts and crafts, we regressed and became what we were before we reached the crafts stage. But today, we are again making uphill and are slowly but steadily industrialising ourselves. For a nation of our size and with these vast natural resources that lie hidden in the bowels of the earth, we have been very slow in our industrialising activities. We have not yet fully developed our key industries, and we depend a great deal on foreign resources. As for the small-scale industries, the field is still quite clear. The pendulum seems to have swung back again, and we are again at the beginning. Industrially we are yet an infant country and all the arguments set forth with such effect by Frederick List are applicable to us. No doubt, the Government has done a great deal through its protectionist policy, but protection by itself is no adequate solution of the problem. Tariff protection would only aid such industries that are in competition with those of foreign countries while non-competitive industries will have to shift for themselves. Industrial enterprises have to be financed adequately, and for this both block and working capital should be made available to the financially solvent and economically needy concerns. But more than anything else, a policy of cheap transport

Road-Rail Transport

will have to be inaugurated. Even the most superficial observer has remarked that transport costs form a disproportionately large proportion of total costs and these by themselves act as a wet blanket by checking ready marketability of commodities. As long as place value is not created by moving articles from places where there is an abundance of them to other places where they are much in demand, there cannot be an all round enhancement in economic values, which alone is the *sine qua non* of a healthy economic life. The need for such a policy can hardly be overemphasised. The bulk of our trade is in agricultural products, and these commodities being of large bulk and low value cannot bear a high freight rate. Agriculture is our main stay. Already, due to our acute agricultural indebtedness which has been assessed at about Rs. 200 crores for Madras presidency alone and to the fragmentation of holdings, the poor agriculturist has not been able to earn a return commensurate with the labour he has expended on it, and consequently his standard of living is something phenomenally low. The average income for an agriculturist in this presidency is only Rs. 25 and the extent of his holdings is only about 3 or 4 acres. Nevertheless, he has got to live upon it. To the Indian Cultivator, agriculture is "more a mode of living than a business." ⁴ The chief cause for this is that he has no facilities to market his produce. The Government are only lethargically awakening to this situation and the Cooperative Department piously hopes to do something by opening sales societies and erecting godowns. If anything like success is to be achieved, we should not wait for Government to undertake this; private agencies should be empowered to construct licensed warehouses for the purpose of stocking produce until such time that there is a rise in agricultural commodity values. But how could the produce be brought

⁴ Royal Commission on Agriculture in India.

to these collecting centres unless we had a cheap form of transport ? As soon as the time is ripe, the commodities will have to be transported to the main distributing centres and to the ports. For all this, a just and equitable freight structure is a prime necessity. Of course, there are alternative means of transport; but none-the-less, for heavy agricultural traffic, the railway will continue to be the chief, if not the only, means of transport. The purpose now is to appraise the incidence of freight rates on commodity prices in general. It is with this end in view that this study of a few typical commodities is taken up for consideration.

COAL

THERE is probably no single factor in our industrial economy which holds such a position of importance as coal. The use of electricity has not proceeded to that extent to which it is desirable. Our consumption of electricity is the lowest, and even Belgium with an area of 12,000 square miles and a population of 8,35,000 generated 5300 million K.W.H. in 1938. Compare this with our total of 203 million K.W.H. and an area of 124,363 square miles for Madras Presidency!⁵ Thus, though it could be used for running machinery of all kinds, electricity does not seem to be used except in the case of small scale industries. Our water-power, though limited, has not been made the best use of, and gas is almost unknown in India. It is used only in the large cities like Bombay and Calcutta for culinary and domestic purposes only. So, our main source of power is coal. Even here, we are not happily placed; since, curiously enough, the coal fields of India are all mainly centred in the provinces of Bengal and Bihar. In British India alone, excluding Burma, coal mining accounts

. 5 Some Aspects of Electrical Development in the Madras Presidency: Sir H. G. Howard. *Vide* The Annamalai University Research Journal.

Road-Rail Transport

for nearly two thirds of the people employed in mines and 88 per cent. of underground workers. The Ranigunj, Jheria and Bokaro fields lie in a line for a hundred miles from Ranigunj westwards. To the north of the Jheria field, lying in close proximity to it, is the Giridih mine. Coal is also worked in Assam, Baluchistan, the Central Provinces of Agra and Oudh and the Punjab, though Bengal and Bihar share the honours of primacy. In 1929 the Jheria field which, together with the Ranigunj and Bokaro fields accounts for 90% of the total Indian production, produced 10,786,000 tons. The Ranigunj field came second with 6,828,000 and the Bokaro mines third with 2,119,000. Giridih and Karanpura produced 771,000 and 467,000 tons respectively, while for the rest of India the figure was 1,337,000 tons.⁶

Referring to the development of coal mining in India, the Labour Commission tritely remarks that "the industry is largely the creation of a single generation." By this it was not meant, that there was no mining prior to this. In fact, the Ranigunj field started working from the early part of the last century, but production was not very great, and it was not till 1895 that it reached anything like three million tons. None the less, its importance as a necessary of life was duly felt by the Government which decreed that special rates should be quoted for coal traffic. But they erred in clubbing coal along with the food grains necessary for sustenance. In doing so, the value of these two classes of commodities was lost sight of; for, obviously, grains and food stuffs could bear a higher rate than coal, since their value was higher. It was, therefore, only in 1891 that an attempt was made to lower the rate. When, in 1895, the industry began to look up and production, for once, reached the fairly high figure of three million tons, the railways awoke to the realities of the situation. The

6 Figures from the Indian Labour Commission Report.

colliery owners, hitherto docile, clamoured for better facilities and lower rates and were successful in getting a reduction. A sort of telescopic schedule was adopted, and these rates were made applicable to lower wagon loads. For distances up to 400 miles, 0·18 pie per maund per mile was charged, and for distances in excess of 400 miles 0·15 pie per maund per mile was charged for the first 400 and 0·10 for distances exceeding 400 miles. These were the maximum rates, while the minimum rate was 0·10 pie per maund per mile. It is needless to say how beneficial this reduction in rates was. The previously prevalent high rates together with the absence of the practice of declaring through rates contributed to the slow progress of the industry. The mischievous consequences of making local rates are rendered glaring when it is remembered that the coal fields lie in an agricultural region far remote from the centres of industry. So, if the industrial centres of Bombay or Ahmedabad had to be supplied, the coal would have to be shipped over a number of railway lines over which only the local distance rates were applicable. In doing so, the advantages accruing from long distance is denied to these people, and there is, thus, a check to the demand for the mineral which will prevent the collieries being worked to capacity.

The turn of the century marks an epoch in the life of the industry. Production figures shot up, and the average for the first quinquennium was 7,627,000 tons, of which Bengal's share was 84·9%; the corresponding figures for 1906-1910 were 11,523,000 and 89·5 per cent. respectively. Thus, there was an increase of nearly 57 per cent. in the production of the mineral. Naturally enough, this sudden increase could not find the railways ready. The East Indian Railway which was the one that tapped the traffic emanating from these mines, could not handle the situation and there was a frightful congestion of

Road-Rail Transport

traffic. Therefore, the construction of a branch line from Midnapore to Jheria was sanctioned so that the Bengal Nagpur Railway could relieve the congestion to some extent. As a necessary concomitant of this, there was a revision of railway freight rates. The new rates introduced in 1902 were as follows:—

	Pie per maund per mile.
For all distances upto 75 miles inclusive ..	0·14
Plus from 76 miles to 200 miles ..	0·12
Plus from 200 miles to 450 miles ..	0·10
Plus from 451 miles to 1,000 miles ..	0·09

It looked as if the industry had yet to develop a great deal, since production figures continued to mount up, and 1906 was the peak year; our exports alone came to a million tons, so that a further change was wrought. The old rates for traffic of less than 200 miles continued, while the rates for longer distance traffic were altered.⁷ The new rate for distances between 200 and 500 miles was 0·06 pie per maund mile and for those in excess of 500 miles, 0·05. Thus the rate for long distance traffic was nearly halved. Mr. R. D. Tiwari has expressed the effect of the changes brought about by these successive changes by calculating the freight for a ton of coal from the Jheria field to important centres basing on the *de facto* rates then prevalent. Thus, the charge for a ton to Bombay in 1901 was Rs. 21-4-0 and in 1907, only Rs. 11-4-0 *i.e.*, the freight costs were nearly halved. Similarly, the rate to Delhi in 1901 was Rs. 14-14-0, in 1902 it was Rs. 12-5-0 and in 1907, it came down to Rs. 7-15-0. But the most phenomenal decrease was in the case of Karachi; here the corresponding figures were Rs. 27-13-0, Rs. 25-2-0 and Rs. 12-10-0—a reduction of Rs. 15-3-0.⁸

7 S. C. Ghose's Monograph on Railway Rates, p. 123.

8 R. D. Tiwari: Freight Rates in India.

The greatest cause for the phenomenal growth in the industry was the outbreak of War in 1914. It has already been pointed out how production increased by more than half the original in 1906-10; and for the succeeding quinquennium the figures actually doubled those for 1901-05; the average tonnage during 1911-15 was 15,440,000. The difficulties ensuing from the situation became so acute that in 1912 the Indian Coal Traffic Conference was convened to study the questions arising from the transport of coal. The conference went into detailed examination of the problem and came to the conclusion "that in the future, there would be a steady expansion of the coal trade required to meet the demands for internal consumption and that in regard to the export coal trade, provided transport facilities are improved, there are possibilities of expansion."⁹ It, therefore, made a number of recommendations. One was that the East Indian and Bengal Nagpur Railways which were the two lines that catered to the traffic of the collieries should take adequate measures to increase their wagon supply commensurate with their demand for handling it, so that they could meet the needs of coal transport at all parts of the year. Consequent upon this, the railways concerned, to some extent, increased their stock of wagons, but none-the-less this shortage still continued as will be shown further on. The Conference further added that ample siding accommodation should be provided, for doing which the railways would have first to know what proportion of additional traffic would be created by such grant of facilities.

The Coal Traffic Commissioners realised the growing importance of this traffic and suggested that a double line should be provided between Dhanbad and Katrasgarh and that a new line should be laid between Burdwan and

⁹ Recommendations; No. 47 of the Indian Coal Conference—1912.

Road-Rail Transport

Bandel both ways, to be later extended as far as Asansol. The Burdwan chord line was accordingly opened on the 1st January 1917, and the East Indian Railway took steps to improve their accommodation at the Howrah Goods Shed. In 1910, a Riverside goods warehouse of 3 storeys and a floor area of about 64,700 sq. ft. was erected, and subsequently two jute sheds were opened, and these were all provided with necessary facilities. The Conference also remarked "that the present system of marshalling trains for separate destinations at each marshalling station in the collieries and detaining these trains until a full load was received was a serious cause of delay in the use of rolling stock." One of its most important recommendations was that collieries lying in the Jheria field on one railway should be allowed to indent for wagons on the other railway for transshipment on the latter's line to Howrah, Shalimar, Kidderpore Docks and other Calcutta destinations, subject to the proviso that coal should not be booked to Howrah when the wagons of the Bengal Nagpur Railway were used. The other exception was that when coal was shipped in the trucks of the East Indian Railway, it should not be despatched to the Coal Depot Station at Shalimar.

With the outbreak of war there was a sudden spurt of industrial activity. The demand for Indian goods increased, and Indian industries had to work overtime to meet the needs of war. So great was the increase, that mushroom concerns came into existence almost over-night and after a brief period collapsed during the post-war crisis of the early twenties. Naturally enough, the demand for coal increased as the following figures show:—

COAL PRODUCTION IN INDIA

Year.	Quantity		Value.	
	Tons.		Rs.	
1918	..	20,722,493	..	90,258,220
1919	..	22,628,037	..	101,192,560

Freight Rates

Year.		Quantity Tons.		Value. Rs.
1920	..	17,962,214	..	92,978,530
1921	..	19,302,947	..	130,100,650
1922	..	19,010,986	..	146,330,140
1923	..	19,656,883	..	146,059,750
1924	..	21,174,284	..	149,653,420
1925	..	20,904,377	..	126,400,910
1926	..	20,999,167	..	101,499,630
1927	..	22,082,336	..	94,870,010
1928	..	22,542,872	..	88,495,030
1929	..	23,418,734	..	89,359,120
1930	..	23,803,048	..	92,625,320
1931	..	21,716,435	..	82,698,360
1932	..	20,153,387	..	68,096,600
1933	..	19,789,163	..	61,177,740
1934	..	22,057,447	..	63,060,950
1935	..	23,016,695	..	65,220,840
1936	..	22,610,821	..	62,498,400
1937	..	25,036,386	..	78,102,440*
1938	..	28,342,906	..	106,423,830

These figures are self-explanatory. Production increased till 1919 when it reached 22,628,037 tons, and then, there was a gradual decrease averaging about 20 million, followed by a steady rise reaching 238 lakhs of tons. The effects of the depression can be seen in the sudden fall in the years 1932 and 1933. The year 1938 marks an epoch in the history of the industry, since the quantity mined was more than 28 millions. But the figures of production should not be taken by themselves unrelated to value. The cyclical trends in business can best be seen when the value side is also considered. Taking value, we find that in 1924

* *N.B.*—Figures are exclusive of Burma which was separated from India from April 1st, 1937.

Road-Rail Transport

the figure reached a maximum of Rs. 149 lakhs, and then, there was a gradual fall in value. With 1930, the depression set in, and the worst year was 1933. Fortunately for us, there has been a slight improvement now, and the value in 1937 increased by nearly 16 millions of rupees over the preceding year inspite of the separation of Burma. In 1938 the increase is by nearly 28 millions.

Simultaneously with the outbreak of war, there was a reduction in exports of coal. The total exports on private account from Calcutta were 4,002,879 tons in 1910-11. Thereafter, there was a gradual increase except for 1911-12, when there was a fall; and in the pre-war year the figure was 4,028,516. The effect of the war was immediately seen in a precipitous fall by more than five lakhs of tons, and during each of the war-years there was a reduction in foreign exports to the tune of nearly a million tons a year until they reached bottom in 1918-19 with 622,264 tons. The chief cause of this fall in exports was the increasing absorption of the mineral within the country itself, consequent on the increasing demand for Indian goods. There was also a falling off in the imports into India. The volume of imports in 1913—the pre-war-year—was 644,934 and thence forward there was a continuous fall until in 1920 it came to only 39,727 tons. The trend of export and import trade in coal can be best seen from the following figures:—

Year		Exports tons.		Imports tons.
1913	..	759,155	..	644,934
1914	..	579,746	..	418,758
1915	..	753,042	..	190,654
1916	..	881,741	..	34,033
1917	..	408,117	..	44,818
1918	..	74,466	..	54,346

Along with this, there was a proportionate increase in the price of coal. In 1905 the price per ton was only about Rs. 3-8-0, and in 1908 the price at Bombay reached the astonishing figure of Rs. 17 *i.e.*, there was a 400 per cent. increase in price within the space of less than half a decade. The natural result of this was that Indian industrial concerns could not keep up with this rise in the price of their most important source of power, so that their development was checked to that extent. The other result was that there was a fall in the demand for Indian coal, and Natal coal took precedence over our exports. Moreover, there was a falling off in the quality of our coal, since mine owners became less meticulous in their supply of the raw material. The value of coal depends mainly on the amount of heat it would generate, *i.e.*, its calorific value as also on the quantity of ash and other waste material it would throw off. The Indian Coal Committee found that much of foreign distrust of Bengal Coal was due to the fact that what was not of first class quality was passed off as "first class Jheria", and such coal it was found, had a larger ash content than the best Indian coal. The Committee, therefore, opined thus: "Our conclusion, as regards quality, is that the best Indian coals can compete in any market in the East; but if such competition is to be effective, only the best coals should be exported and particular care must be taken not to allow the purchaser overseas to be misled as to the precise quality of the coal which will be delivered. It is chiefly lack of attention to these two vital points which has earned for Indian coal a bad name overseas." 10

The Committee made a detailed investigation into the comparative costs of Indian and foreign coal and the competitive ability of the indigenous mineral by ascertaining the F.O.R. price at which Jheria coal could be

10 Report of the Indian Coal Committee, para 27, p. 28.

Road-Rail Transport

shipped. In order to arrive at this free-on-rail price certain deductions had to be made from the price at which our coal could compete at the various ports. The deductions per ton were Rs. 3-8-6 for the railway freight, Re. 1 towards the Calcutta port charges and about ten annas for wastage, insurance and finance, thus making up a total of Rs. 5-2-6. This apart, the steamer freights from Calcutta to the different competing ports would have to be added and these in 1925 were as follows:—¹¹

Calcutta to Rangoon	..	..	Rs. 6	0	0
„ „ Singapore	..	..	„ 7	8	0
„ „ Colombo	..	..	„ 7	8	0
„ „ Madras	..	..	„ 6	12	0
„ „ Bombay	..	..	„ 8	4	0
„ „ Karachi	..	..	„ 8	4	0

Adding the steamer freights to the Rs. 5-2-6 already arrived at, and the commission charges of the Mining Federation, we find that the cost of Jheria coal would be Rs. 11-3-0 at Rangoon, Rs. 12-11-0 at Singapore, Rs. 12-11-0 at Colombo, Rs. 11-15-0 at Madras and Rs. 13-7-0 at Bombay and Karachi. But actually, Natal coal which was the cheapest, ranged in price from Rs. 16-8-0 to Rs. 17-4-0 in Rangoon, so that if Indian coal were to compete with it, the F.O.R. price had to be Rs. 5-5-0 to Rs. 6-1-0. Similarly, Transvaal coal sold at Bombay at Rs. 19 leaving a F.O.R. price of Rs. 5-8-0 for Indian coal. At Karachi, Transvaal coal was the cheapest, selling at about Rs. 19 to Rs. 20-10-0, allowing a margin of Rs. 5 for the F.O.R. price of Indian coal.

In paragraph 36 of their Report the Coal Committee say: “ on the assumption that all the charges that go to make up the c.i.f. price of coal, with the exception of the

11 Report of the Indian Coal Committee, para 27, p. 28.

Freight Rates

pit-head price, remain at the level on which we have worked, the result of the above discussion is to show that, except in Rangoon and Madras, Indian coal can only hope to compete in overseas' markets if its pit's-head price is not higher than Rs. 2 to Rs. 2-8-0 for Singapore, Rs. 5-5-0 for Colombo and Rs. 5 for Bombay and Karachi. We trust that we claim no absolute accuracy for these figures What the figures unquestionably establish is that the difference between the raising costs and the F.O.R. price at which coal must be sold in order to enable it to compete in overseas' markets is negligible, except for Singapore where there is a large margin on the wrong side." This conclusion was inevitably arrived at because the cost of raising a ton of coal in Jheria worked to Rs. 5, while the pit-head cost in Ranigunj came to Rs. 6. But this comparative advantage that the former had over the latter was offset by the nearness of the latter to the docks. It is, thus, obvious that, unless the costs were more than halved, the indigenous coal would be unable to meet the competition of the South African, Australian and Japanese minerals. In this respect, South African bounty fed coal was the worst competitor, and its imports into India on private merchandise alone amounted to 281,793 tons valued at Rs. 74,49,181; this is inclusive of coke and patent fuel.

These factors combined together to put the Railways to considerable difficulty in the matter of handling this traffic. The Government could find no way out of the impasse and resorted to the only course open to them by raising freight rates, so that the freight from Jheria to Bombay which was originally Rs. 11-4-0 increased by nearly 8 per cent. Along with this increase in demand for transport facilities for coal, the supply of wagons for other traffic necessarily declined. In 1913, the base year, the coal traffic handled by the East Indian Railway alone amounted to 10,051,120 tons, and there was a gradual

Road-Rail Transport

increase in traffic, each year recording an increase over the preceding with the single exception of 1919 when there was a slight fall by a lakh of tons. The highest figure reached was 12,341,848 in 1920. On the contrary, there was a slight decrease in the other traffic handled by the same railway. In 1912, the tonnage under this head was 6,654,518 and fell to 5,996,408 in 1920, the worst year being 1917. Similarly, if the figures for wagons—those loaded with coal and other traffic—are studied, it would be seen that the needs of general trade were starved to feed the demand for this traffic. With the outbreak of war, there was a reduction of nearly 75,000 wagons available for general traffic, while there was a corresponding increase of 73,000 in the case of the coal trade. Simultaneously, there was an increase in earnings on coal traffic on the E. I. R.; in 1914-15 earnings were 334·5 lakhs of rupees and in 1918-19 they were 437·1 lakhs. The corresponding figures for all railways were Rs. 40,564·5 lakhs and Rs. 880·4 lakhs respectively.

Under these circumstances, every effort should have been made to meet the requirements of trade. Instead of this, the Government sought the unwise device of checking Indian coal exports and raising rates. Needless to say, such a policy was mischievous in its consequences. But, such is human nature and so great is the motivating influence of income that we fail to profit by the lessons of the past. History has again repeated itself, and the Indian Railways have again raised freight rates by 12½ per cent. due to the exigencies of the present European conflict. The pernicious effects of such an increase of rate hardly need any elucidation. It is common knowledge that we are just trying to get out of the post-war depression and that there has been a tendency for prices to rise. If at this time of business activity an increased freight charge were to be levied, it would have a damping

Freight Rates

effect on Indian industrial development which would ultimately reflect itself in reduced railway earnings. The latest figures show to what extent the coal trade has increased in recent years:—

Year.	Tonnage.	Increase or decrease.	Earnings.	Increase or decrease.
			Rs.	Rs.
1934-35	25,868,4	—	9,58,580	—
1935-36	26,082,4	+ 2,140	9,37,512	— 21,068
1936-37	26,070,8	— 116	9,56,021	+ 18,509
1937-38	29,989,0	+ 39,182	11,22,613	+1,66,592
1938-39	29,744,7	— 2,443	10,74,462	— 48,151

It is clear from the foregoing data that the year 1937-38 evidenced a marked increase as far as both tonnage and earnings were concerned. But in 1938-39 there has been a fall under both heads.

In April 1920, there was a revision of rates; for the first hundred miles the rate was 0.15 pie per mile and from 101 miles to 700 miles, 0.125, and for distances upwards of 700 miles it was 0.05. Hence, while the old freight from the Jheria fields to Karachi was Rs. 13-5-0, on the basis of the new scale the rate was Rs. 13-14-0; similarly, to Lahore it was Rs. 9-15-0 and Rs. 10-8-0, and for Amritsar, it came to Rs. 9-10-0 and Rs. 10-3-0 respectively. The incidence of the new scales was heaviest on long distance traffic since short distance traffic had to bear only a light increase. For example, Cawnpore which is 469 miles distant from Jheria had to bear an increase of only five annas over the old rate of Rs. 6-1-0. This was not all. The railways found they could not still cope with the traffic and, therefore, clamoured for yet higher rates. The Government which was pressed in the matter realised the hardships that industries were put to but, nevertheless, finally yielded to the superior force of the railways and promulgated a new rate structure:—

Road-Rail Transport

Miles	Pie per maund per mile
First 200 miles ..	0·15
201 to 300 miles ..	0·10
301 to 700 miles ..	0·07
701 miles and above ..	0·06

It must be here added that the rebate for export of coal had been increased in 1922 by 45% on coal to which the Jheria rate applied, 39% on coal to which the Asansol rate applied and 25% to Ranigunj coal.

The Coal Committee found that, while railway receipts increased only 29% from Jheria, 33% from Asansol and 34% from Ranigunj, there was side by side, an increase in working costs. It estimated that comparing the years 1912 and 1924, the East Indian and Bengal Nagpur Railways both suffered from an increase in working costs of 61 per cent. and 45 per cent. respectively. In their own words "all that can be gathered with certainty from the figures is that when interest on capital is included, the cost of hauling one ton of goods one mile has increased on the East Indian Railway from 2·29 pies in 1912 to 4·06 pies in 1924, or by 77 per cent.; and on the Bengal Nagpur Railway from 3·57 pies in 1912 to 4·72 pies in 1924, or by 32 per cent. The cost of hauling a goods unit on the East Indian Railway has thus increased by a percentage which is more than twice that by which the ultimate receipts from coal have increased, whilst on the Bengal Nagpur Railway, the increased percentage is much the same for both. It must be remembered in this connection, that the cost of hauling one ton of coal one mile may reasonably be taken as less than that of hauling one ton of all goods, including coal, one mile; for coal is not loaded or unloaded by the railway staff, is carried in full wagon loads and to a very large extent in full train loads, and always or almost always carried at owner's risk

and involves the railways in no responsibility in connection with claims. But, although this means that estimates which are based on the average cost per mile of hauling one ton of all goods may be too high for coal, it does not make it any the easier to ascertain the actual costs.¹³

From the foregoing, it is evident that there were a number of factors conspiring to act as a check on the industry. On the one hand, the pit-head value had risen from Rs. 4-5-0 to Rs. 7-10-0 in 1922. The increased costs acted as a deterrent to its absorption within the country itself, and thus our industries were perforce starved of their requirements. Add to this, the embargo on exports checked its absorption abroad so that the industry was suffering from a glut of the mineral which it could not dispose. Mr. Tiwari speaking of this says "Thus by 1924, the Indian Coal Mining industry manifested in the signs of over production a formidable menace to its future."¹⁴ That is not the correct way to put it; what the industry was suffering from was not overproduction but under-consumption. He agrees that the export embargo prevented its being sent abroad, and that our industries could not, in virtue of the increased prices and higher rates, get their necessary requirements. When that is conceded, one fails to see how there could be any overproduction, though production actually increased. The reason for this lies in demand not being commensurate with the needs of Indian trade and industry. In this, the industries specially hard hit were those that were very remote from the coal fields. It is a tragic feature of our collieries that they all lie in a belt of territory in Bengal, Bihar and Orissa, and, as a consequence, upcountry centres have to bear a high transport cost. Moreover, they do not consist of a few large mines, but a congeries of small ones. The average number

13 Report of the Indian Coal Committee—1925, p. 57.

14 R. D. Tiwari: Railway Rates in India, p. 182.

Road-Rail Transport

of these during the period 1896-1900 was 191. For the succeeding quinquennium, the average was 297 and in 1916-20 it was 700. The maximum was reached in 1922 when the number rose to 953 and thence forward there has been a steady decline till in the pre-depression year, 1929, it was only 548. This factor alone by itself was sufficient to put the railways to considerable difficulty in handling traffic.

The embargo on coal exports almost completely robbed coal mining of all the advantages of expansion. Not only were exports checked by making it incumbent on exporters to take out a licence, but the preference shown to bunker coal was also removed. The mal-effects of these are best seen in import statistics which give a dismal picture of mis-directed policy. In 1918-19, our total import of coal was 66,634 tons and on the growing expansion of the collieries, there was a phenomenal fall in the next year to 38,180 tons. But, due to the restrictions already referred to, in 1921-22 our imports reached the colossal figure of 1,489,252 tons. Thus, not only was our indigenous coal deprived of the means of being exported, but actually the Indian market was dumped with foreign coal. So great was the hold that the latter had, that Indian coal has not been able to regain its pre-war position even in India.

The chief difficulty of the railways has been that of wagon shortage. This has been a long standing complaint which even now has not yet been adequately dealt with. In the course of its proceedings, the Acworth Committee was able to get a number of witnesses who could testify to this. It is well to quote here the remarks of Mr. Pattison, the Chairman of the Indian Mining Federation:—

“ The Transport difficulty has been constant from about 1905, when the coal output reached 8,000,000 tons in the year. At the present time, there are about 10,000,000 tons of exportable coal available at the coal fields per annum,

and allowing for the interim increase of transport facilities, the coal trade is handicapped about to the same degree as in 1905, but of course on a much larger scale.”

“ Many instances of collieries being fully equipped, but unable to despatch coal for want of sidings and with no hope of getting these within the next year or so. One siding had been applied for in April 1918, but was not sanctioned until 1920. The siding, about 17 miles long, will serve a number of collieries; construction will take about a year, but difficulty exists in getting rails moved from Delhi; meanwhile Rs. 30,00,000 of the coal company’s capital is lying idle waiting completion of the siding.”¹⁵

Conditions today are no better. Reports of the Chambers of Commerce are full of complaints of wagon shortage inspite of the best endeavours of the railways. The East Indian Railway adopted the procedure of stocking its coal supply during the slack months of June to November to relieve the shortage. In 1937, which was the peak year since 1929, 10,725,767 tons of coal were loaded, and during the first nine months of the same year 71,760 more wagons than for the corresponding period in 1936. Nevertheless, a serious shortage was still felt. At Cawnpore, the mills were starved of their needs of the raw material since the coal owners sold their stocks to middle men at the expense of their regular customers owing to a shortage of wagons available. It would be interesting to cite here the example of the Jute industry. In their letter dated 14th January 1937, the Jute Mills Association complained to the Coal Manager of the East Indian Railway as follows:—

“ I am directed to address you with regard to the difficulty which certain Jute Mills are at present experiencing in obtaining adequate supplies of coal due, it

¹⁵ Vol. III, paras 4413 and 4421: Minutes of Evidence of the Acworth Committee, 1920-21.

Road-Rail Transport

is believed, to the inability of your railway to meet the demand for coal wagons on the part of collieries supplying coal to the mills. Stocks of coal at many of the mills are in a seriously depleted state, in some cases less than a quarter of the normal stock remaining. At the beginning of this week, one mill had only four days' supply in hand, while in the case of another mill, whose normal requirements are forty-six tons per day and whose normal stock is the equivalent of twenty-five days' consumption, the stock has been reduced to the equivalent of only six days' consumption, representing a reduction from normal of seventy-six percent. It is apparent that a continuance of the present shortage of wagons may force certain of these mills served by your railway to close down until stocks are replenished; and the far-reaching consequences which such an enforced stoppage of work would have under present conditions do not require to be emphasised here." ¹⁶ It is needless to multiply examples; these are sufficiently explanatory. All that needs emphasis is that the problem has not yet been solved adequately and that its continuance would constitute a grave menace to industrial development. How it ought to be tackled will be dealt with later.

The effect of these combined forces, *viz.*, wagon shortage, increased production, exports embargo and unfavourable railway rates—was to stultify the industry and to press them to demand for a reduction in freight charges. These complaints did not fall on deaf ears since some relief was granted in 1926 for long distance traffic exceeding 400 miles amounting roughly to 10 percent. It must here be mentioned that inspite of the high rates prevalent before 1926, large quantities were offered for transport. The reason for this lies in the fact that coal is an essential for production and, in the absence of substitutes, is inelastic in demand. The result of the reduction introduced in 1926

16 Report of the Bengal Chamber of Commerce for 1937.

was an increase in coal earnings. In 1925-26, 895.5 lakhs of rupees came into the coffers of the railways for transshipment of 220.1 lakhs of tons; in 1926-27, the corresponding figures were 903.8 and 239.1 and in 1927-28, 950.4 and 257.8 lakhs respectively. Thus, on account of the new rates, there was an increase in earnings of 46.6 lakhs of rupees and 18.7 lakhs in tonnage which is more eloquent than words. The Railway Member himself recognised the advantages flowing from this concession so that when in 1929 a demand for further reduction was made, there was not much difficulty for Government in lowering the rate on traffic exceeding 400 miles to 0.05 pie per mile per maund. Traffic instantaneously reacted to this and there was an increase of 16.3 lakhs under earnings and 17.8 lakhs under tonnage in 1929-30 over 1928-29.

Just as we were settling down to stable conditions of prosperity and when prospects for Indian economic progress looked very rosy, there came the Great Crisis precipitating us into the worst depression in history. Prices came down with a crash, debts became frozen and credit got jammed up. With a sudden cessation of productive activity, unemployment grew apace and idle stocks began to accumulate. On curtailment of incomes, consumers' and producers' demand got a set-back thus bringing about a further reduction in prices. The slump, thus, affected every aspect of our economy. In 1929-30 the value of our net exports of merchandise was Rs. 77,13,55,000. Immediately the next year it came down to Rs. 60,81,48,000. The worst year was 1933-34 when our exports of merchandise shrank to the dreadfully low figure of Rs. 1,95,58,000. Needless to say, the coal industry suffered likewise, and exports in 1936-37 were nearly a third of its volume in 1928-29. On the other hand, Natal coal was gaining a firmer hold in the Indian Market and this, together with the electrification of the railway lines

Road-Rail Transport

of the Great Indian Peninsular, the Bombay Baroda and Central India and South Indian Railways, considerably reduced the indigenous demand for the mineral.

These by themselves were sufficiently painful, but the most “ unkindest cut ” of all was the introduction of the surcharge of 15 per cent on coal freights as from January 1932. It was intended to tide over the difficulties caused by the attenuated railway earnings. The inequity of such a procedure hardly needs any emphasis. Production was further curtailed and the coal mines adopted drastic measures of economy. The plight of the industry was duly recognised by Government who, in their letter of the 28th January 1935 to the Provincial Governments, stated:—

“ The Government of India have examined the possibility of assisting the industry in other ways which would not injure the community or the future interests of the industry itself. With this end in view they have decided to modify the surcharge on Railway freights for coal. As from 1st April next, the surcharge will be reduced:—

(a) by altering the basic percentage from 15% to 12½%.

(b) by subjecting it to a maximum of one rupee per ton irrespective of distance.

They trust that these concessions which are estimated to involve a reduction of over 20 lakhs in receipts from the surcharge will prove of some direct financial assistance to the recovery of industry generally, and will thus prove to be at the same time a wise step from the point of view of the railways themselves. The Government of India have already announced that in their view, the first major reduction in railway freights should relate

to the surcharge, and they hope that improvement in conditions will make it possible for them to take further action in this direction."

Notwithstanding this lowering in the freight surcharge, the competitive position of Indian coal was in no way bettered. It was found that South African bounty fed coal maintained a strong hold because of its relatively higher competitive ability. It was, therefore, unanimously resolved at the annual meeting of the Associated Chambers of Commerce held in December 1935 at Calcutta, to request Government to impose a countervailing duty of Rs. 1-8-0 on South African Coal imported into India over and above the revenue duty of 10 annas per ton already imposed. The nett C. I. F. price per ton of that coal amounted to Rs. 11-5-0 whereas that for Poniaty Seam Coal at Bombay was Rs. 11-4-0. This was made up of:—¹⁷

Coal at pitsmouth	Rs.	2	8	0
Average nett railway freight	"	2	7	0
Loading charges	"	0	8	0
River dues	"	0	4	6
Grading Board Fee	"	0	0	6
Agency Commission	"	0	2	0
Loss of 2% off survey weight	"	0	2	0
<hr/>				
F.O.B. Price	"	6	0	0
Present steamer freight	"	6	0	0
Insurance charges	"	0	1	0
<hr/>				
Less despatch money etc.	"	12	1	0
C.I.F. nett	"	0	13	0
<hr/>				
		Rs.	11	4 0
<hr/>				

¹⁷ Figures taken from the Annual Report of the Madras Chamber of Commerce for 1936.

Road-Rail Transport

Thus it is seen, that the comparative price advantage of Indian coal amounts to only one anna. It must be borne in mind that the pitsmouth price is only Rs. 2-8-0, whereas the Coal Committee had pointed out that the average raising costs for Jheria and Ranigunj coal were Rs. 5 and Rs. 6 respectively. Allowing for a slight decrease in costs due to more efficient methods of coal extraction and lower costs due to the depression, the Rs. 2-8-0 bears no relation to the figures quoted by the Coal Committee. And in spite of this reduced cost, South African coal could compete on terms of equality with our coal. What was this due to? The explanation is provided by Sir Padmaji Ginwala who plainly ascribes it to the bounty given by the South African Government on export coal. He says that "the bounty is part of a deliberate policy of the South African Government which aims at the development of the export trade in Coal, a result which could only be obtained at the expense of Indian coal which is its principal rival."¹⁸ He categorically affirms that the competitive ability of the foreign coal was due to state interference, and, therefore, he pressed for the adoption of a similar measure here. Mr. W. C. Banerjee, speaking of the rebate on Coal exported to foreign countries, felt that it was inadequate and that a further fillip should be given to Indian coal. In his dissenting minute he says "I therefore suggest an increase of cent per cent of the present rate of increase in rebate with regard to export to foreign ports."¹⁹

The only outcome of all this was that Government most unwillingly sanctioned an extra 8 annas on coal exports to ports outside India and Burma. It was like giving a drop of water to slake the thirst of the traveller of the desert. But what was far more astounding than this small

¹⁸ Para 47 of the Tariff Board Report (Minority), 1936.

¹⁹ Minute of Dissent; Report of the Coal Committee, 1925, p. 143, para 13.

concession was the proposal to introduce new scales of rates for coal booked on the Bengal Nagpur and East Indian Railways, "the intention being that the new scale shall be equivalent approximately to the existing scales with the addition of the surcharge, the surcharge on freights being incorporated in the new scales instead of being levied separately."²⁰

The outbreak of the present war has resulted in an all round increase in demand for Indian products and to an increasing pressure on the railways to cope with the increased traffic. In presenting his budget for 1939-40, Sir Andrew Clow anticipates the gross traffic receipts for the year 1939-40 at Rs. 97.3 crores instead of Rs. 94.75 crores, and a net closing surplus of Rs. 3.61 crores which will be paid into the general revenues. The following statistics of four-wheeled wagons loaded from 1st April 1939 to 31st January 1940, speak eloquently of the brisk business conditions.²¹

Items.	1938-39.	1939-40.	1939-40 compared with 1938-39.
1. Coal and coke for the public and foreign railways.	946,211	1,001,163	5.81%
2. Grains and pulses.	599,068	661,119	10.4%
3. Oil Seeds ..	216,391	183,286	15.5%
4. Cotton ..	129,707	135,843	4.73%
5. Miscellaneous smalls ..	1,466,286	1,444,862	—1.20%
6. Miscellaneous full wagons ..	2,226,684	2,270,946	1.99%
7. Home Line stores and materials ..	353,109	375,952	6.47%
8. Coal for Home Line on B. N. & E. I. Railways ..	111,044	118,258	6.50%

20 Letter dated 8th June 1937 from the Agent, East Indian Railway, to the Secretary, Indian Mining Federation.

21 Figures collected from the "Capital", 22nd Feb. 1940.

Road-Rail Transport

In view of these increases, there has been a general all round enhancement of $12\frac{1}{2}\%$ in freight rates and $6\frac{1}{4}\%$ in the case of passenger traffic as from March 1st, 1940. In the case of coal, the maximum on the surcharge has been removed in addition to an increase of the surcharge from $12\frac{1}{2}\%$ to 15 per cent, which will be raised to 20 per cent from 1st November. Whatever may be the exigencies of war, one feels that conditions here do not justify an increase in rates; more so, since traffic receipts are continually on the increase. It should not be argued that working costs also have increased, since with increasing traffic working costs also must necessarily follow suit. To raise freight rates would be to rob business enterprise of possible means of expansion and check industrial growth. At any rate, though probably such a procedure may be justifiable later on, a rate increase at the present juncture is premature and unjustifiable. It is bad economics and worse policy, as the 'Capital' would put it, to make hay while the sun shines.

This concludes our study of the freight position of the industry. It has been amply demonstrated that the industry is being put to considerable difficulties. Much has been made about the quality of our coal. It has been constantly remarked that our coal has not that calorific value of foreign minerals. But, such a high authority as the Indian Coal Committee assert that our best coals can any day compete with their foreign rivals; the main reason for the competitive ability of the latter is that they are State-subsidized. With a view to solving the problem of quality, the Coal Fields Committee as also the Coal Committee recommended the forming of a Grading Board. This Board is to classify coal in the order of merit, and to publish a list of the coals so graded, and to issue certificates. Only holders of such certificates are eligible for the special concessions from the Railways and the Port Commissioners.

The Committee did not favour the extension of this certification to bunker coal. Apart from this question of quality, the system of production needs rationalisation, and cut-throat competition among colliery owners must be killed. It is these factors that tend to place our coal at a disadvantage in the international market. Buyers are not so patriotic as to ascertain the nationality of the stuff they get; as long as they get their money's worth and they find it is cheap enough, they buy. Thus, if Indian coal is to successfully compete, what is urgently called for is rationalisation.

In para 47 of their report, the Coal Committee remark, "On no point regarding the working of the railway did the representatives of the coal trade who appeared before us lay more stress than on the necessity for a more adequate and more regular supply, that is, on a supply which would approximate more nearly to the requirements of each colliery and which would not vary so greatly from day to day as it does at present."²² The chief difficulty about coal mining is that the labour employed is largely agricultural and the demand for wagons reaches its highest during the months of February to May which coincides with the demand of general merchandise for transportation facilities. For the rest of the year, business is slack and the rolling stock lies idle. Since 1921, the pooling system has been successfully worked whereby much of the difficulty has been met. Under this system, any railway can load any wagon to any destination, except certain special types of wagons, and in case it is in need of a further complement of trucks, the Director of Wagon Exchange would arrange for their supply by such railways as have idle wagons on their hands. In this way, a better distribution of wagons is made. None-the-less, there is considerable shortage, and in certain quarters a suggestion

²² *Vide* para 47 of the Indian Coal Committee.

Road-Rail Transport

has been made that railways should purchase the requisite number of rolling stock so as to be able to meet any emergency. The East Indian Railway has done a great deal to alleviate this problem. It has, by accumulating its loco-coal requirements during the slack season, eased the situation. In 1937, it was able to load 10,725,767 tons in 512,143 wagons. Whenever a shortage did occur, the distribution of wagons was made in accordance with the basis fixed for each colliery by the Wagons Supply Committee. Preference was necessarily given only to public utility undertakings and exporters.

Another suggestion which deserves consideration is the quotation of seasonal rates. Mr. Banerjea fails to understand why his colleagues could not agree to this. Since the demand for transportation facilities is seasonal in nature, the quotation of low rates during the off-season would tempt some to undertake their transshipment during such period, and *ipso facto* this would ease the tension. He also pleads for the abolition of the system of pre-payment and suggests that traffic should be accepted under 'To Pay' terms, since "the danger of potential loss which a despatching colliery always runs in booking coal 'To Pay' naturally ensures great precaution on the part of the colliery in choosing only bonafide consignees,"²³ and this is sufficient guarantee against loss to any railway undertaking.

To conclude, the history of coal transportation has been a dismal record of incapacity and lack of policy on the part of railways. It exemplifies the stultification of an industry due to inadequate transportation facilities and mischievous policy. It shows how a growing industry was nipped in the bud by the unwise policy of laying an embargo on exports. "The Indian Export Trade was

²³ Minute of Dissent. Report of the Coal Committee, para 18, p. 146.

cut off at a moment when it reached its highest point, and it is the effect of this one severe blight which is still writ large on the present depressed state of the industry." 24 The subsequent post-war rate changes partook of the quality of a sop to Cerberus, and the crowning inequity of all was the surcharge of 15% which was later reduced to 12½% and will be again raised to 20% in November 1940. That such treatment should be meted out to a key industry which supplies the sinews of productive activity is the more depressing. It only shows the influence of powerful interests in moulding policy. The Government have vast financial interests in these railways, so that it is no wonder that they should be led by them and coerced into measures which cannot seriously stand the test of scrutiny. That, however sad it may be, is the barest truth and we have got to face the music.

TOBACCO

Let us begin with a quotation from the excellent report of the Agricultural Marketing Department which says with epigrammatic terseness, "tobacco is possibly the democratic luxury and as such is a rich man's solace and a poor man's comfort." It is a large leaf belonging to the botanical genus of *Nicotiana* and is pungent in taste; being narcotic, it is an excellent stimulant. It is used in a variety of ways; it is smoked as cigarettes, cigars or cheroots; it is used as an irritant of the nasal nerves in the form of snuff or is chewed in quids. Probably its greatest demand is for purposes of smoking and with the increasing growth of not only adult but also juvenile addiction to this habit, the commercial importance of tobacco has increased.

In 1934-35 the total area under tobacco for the world was 70,61,000 acres. Of this the share of China was

24 Minute of Dissent. Report of the Coal Committee, para 18, p. 138.

Road-Rail Transport

13,45,000 acres. The most important single producing country was America which had an acreage of 23,97,000 and Asia, excluding China, came next with 22,26,000 acres. The other countries worth mentioning are Africa, Europe, Soviet Russia and Oceania. There has, however, been a slight shrinkage in the area through the years. The total average acreage, excluding China, for the quinquennium 1925-30 was 59,36,000 acres, whereas in 1933-34 it was 3,000 acres less and in 1934-35 there was a much smaller area *viz.* 57,08,000, thus registering a fall of 2,25,000 acres over the previous year. This is attributable to the baneful effects of the Great Depression which affected every branch of industry and trade.

Taking the case of India alone, we find that the share of the various provinces in the raising of this crop is as follows:—

Average area under Tobacco

(Average of 1929-30 to 1935-1936)

British India.	Thousand Acres.	Percentage of total area in British India.	Percentage of all India acreage.
Bengal	.. 293	27.8	21.7
Bihar and Orissa	.. 142	13.8	10.6
Bombay	.. 151	14.3	11.2
Madras	.. 264	25.0	19.5
Punjab	.. 71	6.7	5.2
United Provinces	.. 84	8.0	6.2
Other Provinces	.. 46	4.4	3.4
<hr/>			
Total British Provinces.	1,051	100.0	77.8
<hr/>			

Freight Rates

Indian States.	Thousand Acres.	Percentage in Native States.	Percentage of all India acreage.
Baroda ..	45	15.1	3.3
Cooch-Bihar ..	54	18.1	4.0
Deccan States and Kolhapur ..	51	17.0	3.8
Nizam's Dominions ..	78	26.1	5.8
Mysore ..	24	8.0	1.8
Other States ..	47	15.1	3.5
	<hr/>	<hr/>	<hr/>
Total Indian States ..	299	100.0	22.2
	<hr/>	<hr/>	<hr/>
Total India ..	1,350	..	100.0
	<hr/>	<hr/>	<hr/>

These figures are self-revealing. We gather therefrom that the province with the largest acreage is Bengal which has 21.7% of the total Indian acreage and our Presidency comes next with 264,000 acres and a percentage of 25. Bombay comes third with Bihar and Orissa in hot succession. In 1936-37 the acreage in Madras fell to 253,000. It is worthwhile studying the figures for this province. The pre-war average for the five years ending 1913-14 was 205 (in thousands of acres). The average for a subsequent quinquennium, that is, 1919-24, was 213 thus registering an increase of nearly 4%. During the period 1924-29 there was a sudden jump to 254,000 which meant an increase in acreage of 41,000 or 19 per cent over the corresponding figure for the previous quinquennium. The average rises to a maximum in 1929-36 and reaches the figure of 264,000. Taking individual years, it is seen that in 1927-28 the acreage in thousands was 276; thereafter there has been a gradual decline coinciding with the depression years until we reach 1934-35 when the record figure of 292,000 is reached. Subsequently there has again been another fall.

Road-Rail Transport

been a fall of 38% in the case of the former, and a rise of 315% in the latter. These figures speak for themselves.

Bengal heads the All-India figures for acreage. The chief centres of cultivation are the districts of Rangpur, Jalpaiguri and Dinapur; the total acreage in 1934-35 being 292,000. In the Madras Presidency which comes second, Guntur is the largest producing district and accounts for 8.2 per cent of the total area for All-India. The soil and climatic conditions are excellently suited for the raising of the Virginian variety, and it is pleasing to note that there has been a steady increase in the acreage under this. The district of Vizagapatam comes second with 52,000 acres, Coimbatore third with 31,000 and Madura fourth with 8,700 acres. Besides these important producing districts, there is a fair area under this crop in almost all the districts. Some of the best varieties are grown in the district of South Arcot; and Sivapuri, a village five miles south-east of Chidambaram, produces a first class type which is heavily in demand all over the presidency. It is a broad leaf with thick veins and has a biting pungency which makes it excellent for chewing purposes. Dindigul in the Madura District is an important manufacturing centre which specialises in the production of cheroots. Messrs. Spencer & Co., have established a branch there to tap the local produce.

The manufacture of tobacco is purely a cottage industry. There are, nevertheless, a few factories which are to be found mostly in Bihar and Bangalore, which are partially seasonal in nature. In 1929 there were in India 16 factories employing 9,922 operatives. But the bulk of the manufacture is carried on under conditions of sweating. The Indian Labour Commission found grave cause for misapprehension; their views are best expressed in their own words. "The making of the *bidi* (the indigenous

cigarette) is an industry widely spread over the country. It is partly carried on in the home, but mainly in workshops in the bigger cities and towns. Every type of building is used, but small workshops preponderate and it is here that the graver problems mainly arise. Many of these places are small airless boxes often without any windows where the workers squeeze between them. Others are dark semi-basements with damp mud floors unsuitable for manufacturing processes, particularly in an industry where the workers sit or squat on the floor throughout the working day. Sanitary conveniences and adequate arrangements for removal of refuse are generally absent. Payment is almost universally made by piece rates; the hours are frequently unregulated by the employers, and many smaller workshops are open day and night. Regular intervals for meals and weekly holidays are generally non-existent. In the case of adults, these matters are automatically regulated by individual circumstances, the worker coming and going as he pleases, and often indeed, working in more than one place in the course of the week. Nevertheless, in the case of full time workers, that is, those not using 'bidi' making as a supplementary source of income, the hours are frequently unduly long, the length of the working day being determined by the workers' own poverty and the comparatively low yield of the piece-rates paid.' ' 25

The demand for tobacco is greatest soon after the harvest, since storing takes the sting off the leaves and renders them less strong in quality. Hence the traffic in this commodity is most brisk during the months of March to July. The following figures collected from the Rail and River borne trade statistics verify this statement: 26

25 *Vide* Report of the Royal Commission on Labour in India, p. 96.

26 *N.B.*—The figures relate to the triennium 1934-37.

Road-Rail Transport

Month.	Quantity (in thousands of maunds).	Month.	Quantity (in thousands of maunds).
April	382	October	231
May	451	November	204
June	387	December	185
July	290	January	210
August	232	February	210
September	203	March	284
		Total	3,230

In this traffic, Madras has the second largest share and was able to export 825·8 (in thousands of maunds) of unmanufactured tobacco to the various provinces and ports of India; this excludes the share of Madras ports which amounted to 48·8. Bihar and Orissa is first with 893·8. Of the 825·8 for the share of Madras, 430·2 found their way to the port of Madras for exportation. Among the importing provinces, the United Provinces has the most important share in the rail and river-borne trade. This province alone absorbed 477·9; Madras Port was a close second with 453·4 and Calcutta Port came hot on the heels of Madras with 435. (*All these figures are in thousands of maunds and are average for the triennium 1934-37*). It is thus clear from the foregoing figures that the ports of Madras Province are the chief distributing centres to foreign countries and that a very considerable traffic, consequently, moves to them. Some idea of the extent of the rail-borne traffic in this commodity can be gained from these figures:—

Rail-borne trade of Madras Province (in tons)

RAW TOBACCO					
Month.		Import.		Export.	
		1938.	1939.	1938.	1939.
January	..	148.7	241.9	2191.7	1129.4
February	..	428.8	378.8	1389.9	676.4
March	..	651.8	584.5	1946.4	2159.5

Freight Rates

Month.	Import.		Export.	
	1938	1939.	1938.	1939.
April ..	427·4	563·3	1545·9	3073·2
May ..	310·5	179·0	1308·0	2019·6
June ..	188·7	273·1	1181·9	1312·7
July ..	270·3	211·6	1012·9	1241·2
August ..	261·3	122·9	1106·7	96·1
September ..	215·4	127·5	604·7	1191·3
October ..	219·9	—	1191·9	—
November ..	165·9	—	2059·2	—
December ..	221·9	—	—	—
	<hr/> 3,510·6		<hr/> 15,539·2	

It is observable from this table that the months when traffic is heaviest are February, March and April. In 1938 the rail imports into Madras amounted to 3510·6 tons and exports to 15,539·2 thus making an aggregate total of 19,049·8 tons. The figures also reveal an increased traffic in the months of November and December which calls for explanation. It has been already pointed out that the Indian cultivator prefers to dispose of his crop immediately after harvest, since he has no storage facilities that would protect him from the vagaries of the weather. But where tobacco is exported, not as such but, after being cured, there is some delay engendered. In the district of Guntur in this Presidency, nearly 90 per cent of the crop is sold off by the end of March. This is largely bought by big manufacturers who subject the Virginian tobacco to processing and prepare it ready for exportation. Thus, though most of the crop pass hands from the growers to the manufacturers, only a third goes out of the district. In November and December, after the leaves have been seasoned, the outward traffic commences, thus accounting for the high traffic figures for these two months. On the import side, the slack months appear to be January,

Road-Rail Transport

May—June, November and December. Though this is the conclusion that could be arrived at from the statistics for these two years, the Marketing Report basing its calculation on previous years, say that “ November to January is the period of high imports and these three months account for over 37 per cent of the average annual imports; August and February are the months of low imports.”²⁷

Country manufactured tobacco, which includes Bidi tobacco, that is broken tobacco, used in the manufacture of *bidies* and hookah tobacco is placed in class 4B in the General Goods Classification, if shipped at railway risk. If it is at Owners' risk, the 4A Class rate is charged; that is, the rates are 0.72 pie per maund per mile and 0.67 pie per maund per mile respectively. These are the maximum, the minimum being 0.166 pie; but always, the maximum rates are charged, unless otherwise mentioned. The South Indian Railway, however, charges at a lower rate; the rate at Railway Risk is 0.67 pie while that at Owners' Risk is 0.62. The other important railways that adopt the same classification are the Bengal Nagpur, The East Indian, the North-Western, the G. I. P. and the B. B. and C. I. Railways. Unmanufactured country tobacco, which includes raw tobacco, cured tobacco, tobacco stalks and dust, is accepted only at railway risk. In the general classification, it is assigned to the 4A class but the South Indian Railway charges only at fourth class, that is, 0.62 pie. With regard to cigarettes, the minimum weight for a consignment is 160 maunds and the minimum distance is 400 miles; the rate under these circumstances at R. R. is 0.67 and at O.R. is 0.62 pie per maund per mile. The South Indian Railway allows the application of the differential rule as regards distance only in the case of local booking. This rule states that “ when goods of the same description and booked in the same direction are

²⁷ Report on the Marketing of Tobacco, p. 49.

Freight Rates

charged at different rates according to distance, the charge for the lesser distance shall not exceed the charge for the greater distance." 28

The following are some of the station-to-station rates specially quoted for the free movement of unmanufactured tobacco from important producing and manufacturing centres to the distributing centres.

From	To	Railway.	Distance.	Calculated class rate (per maund).			Special rate charged (per maund).		
				RS.	A.	P.	RS.	A.	P.
1. Nipani (Out Agency).	Shalimar-Calcutta via Chikodi Road & Waltair ..	M.S.M.	789						
		B.N.	545						
			<hr/> 1,334	4	9	0	2	0	0
2. Guntur ..	Shalimar-Calcutta via Tenali & Waltair ..	M.S.M.	237						
		B.N.	545						
			<hr/> 782	2	9	9	1	8	7
3. Chirala ..	Monghyr (via Waltair & Asansol) ..	M.S.M.	273						
		B.N.	605						
		E.I.	164						
			<hr/> 1,042	3	6	10	2	3	11
4. Guntur ..	.. ..	M.S.M.	253						
		B.N.	605						
		E.I.	164						
			<hr/> 1,022	3	5	0	2	3	3

In regard to case (2) the special conditions are that it should be carried at Owners' risk in a minimum wagon load of 200 maunds with loading and unloading to be done by the consignor and the consignee. If, however, the tobacco is packed in casks, the minimum wagon load is only 120 maunds. In the second and third cases, the conditions are that it should be carried at Owners' Risk in minimum consignments of 400 maunds, and when packed in casks, a minimum wagon load of 120 maunds is specified. These figures show the extent of the concession offered by these

Road-Rail Transport

station-to-station rates. If we take the first case, we observe that the special rate is nearly 44 per cent of the class rate for the same distance. In the second case, the rate concession is less, as the special rate is nearly 49 per cent of the class rate.

Let us now take the price figures so as to gauge the extent of the incidence of these rates. Prices vary with the quality of the tobacco, from Re. 0-12-0 per maund to Rs. 80 per maund. It is usual in the Guntur district to sell the crop even when it is green. It is sold either on the basis of weight or on that of acreage. It has been estimated that in 1934-36 the average price for green leaf was ranging between Rs. 15 to 20 per candy of 500 maunds. Sometimes tobacco fetches a higher price when it is stored for some time and then sold. Cigar and cigarette tobacco seem to possess a higher value after they have been stored for a year or two; the price difference may be anything from 5 to 25% depending on the quality of the commodity and the length of time for which it has been stored. But, due to the absence of any definite standardisation, there is a difference in the prices fetched by the same quality in the same market and on the same day, so that this difference varies between Re. 1 and Rs. 5 per maund. The Marketing Report remarks that in a village named Bakroo in the Charator area of Bombay-Gujarat, the range of prices noted on a single day in February 1935, varied from Rs. 2-12-0 to Rs. 5 per local maund of 43 lb. of Lal bidi tobacco.”²⁹ The greatest price range appears to be in the Central Provinces, and the least in Bihar.

The average wholesale prices of raw tobacco at Guntur for the best quality varies round about the figure Rs. 13-8-0 per maund. In 1932, the January price was Rs. 14 and in 1935 the price during May was Rs. 13-5-0. There is considerable difference between the maximum and

²⁹ Marketing of Tobacco, p. 146.

the minimum prices that the same quality fetches during the same month. For example, in 1935, the maximum and minimum quotations for second quality 'Natu' tobacco for the month of January ranged between Rs. 8-3 and Rs. 6, a difference of Rs. 2-3 which is really very high. The third quality tobacco usually sells at about Rs. 7-8-0 per maund, and the minimum is Rs. 6-0-0. There is a slight seasonal trend in tobacco prices. Normally, they tend to rise during the months of April, May and June after which they fall, the lowest figures usually being for January. The wholesale price of tobacco as on the 22nd December 1939 for first quality tobacco at Erode was Rs. 3-8-0 per maund of 28 pounds. While these are the price quotations for raw or 'Natu' tobacco, those for cigar and cheroot tobacco are much higher, since they have undergone curing and processing. The average over the five years 1931-35 was about Rs. 19 per maund; the highest figures were in December; in 1935, for that month the price was Rs. 26-15-10 and the highest December quotation was in 1932 when it was Rs. 28-12-9. The minimum figures prevail in March; in 1935 the corresponding price was Rs. 15-4-10. Thus, there is a difference in the monthly prices to the extent of Rs. 11 or nearly 75% of the minimum price. These figures refer to the West Godavari District of Madras. The ex-factory price of cigar tobacco at Dindigul was Rs. 13-13-0 per maund in 1935-36; the highest price fetched was in 1925-26 when it was Rs. 25-10-0; and in 1931-32, it touched the bottom with Rs. 9-6-0, thus exhibiting the price fluctuations that attend business cycles.

As against the prices of raw unmanufactured tobacco, we have the following values for manufactured products. The Marketing Report has made a comparative study of these rates. The average price for a thousand cigarettes of W. D. and H. O. Wills was about Rs. 21, while those

Road-Rail Transport

for ' Scissors ' brand ranged from Rs. 17 to Rs. 17-8-0. The corresponding price for Indian made " Charminar " cigarettes was about Rs. 2-6-0 and that for " Guinea Gold " cigarettes was Rs. 5-4-0. High class cigars are pretty costly. Usually, these are sold in boxes of 50 and Dindigul cigars, manufactured by Spencers, fetch prices ranging from Rs. 2 for " Planters Ordinary " and Rs. 12-10-0 for " Casino Coronas de Luxe ". Cheroots cost from Rs. 2 to Rs. 5 per hundred according to quality. As regards " bidis ", the price for a thousand at Madras range from Rs. 1-3-6 to Rs. 1-15-3. While these prices are fairly high, for high class manufactured chewing tobacco they are much higher. The price at Delhi for first class tobacco of this variety was Rs. 64 per seer and that for the fifth class Rs. 5. The price for Madras snuff may vary from Re. 0-10-0 to Rs. 16 per seer.* The table below gives the latest price quotations for typical varieties in this Presidency. The figures refer to three months prior to the present war and for three months subsequent to its outbreak.

TOBACCO PRICES.³⁰
DATES.

Variety.	April 24, 1939.	May 29, 1939.	June 26, 1939.	August 29, 1940.	January 29, 1940.	February 12, 1940.
1. Guntur						
Virginia	11.52	11.52	11.52	..	32.92	30.45
Local	4.14	4.14	4.14	4.14	6.99	6.99
2. Erode						
Aircured	14.24	14.24	14.24	10.29	11.08	11.08
Meenam-	No	No	No	No	No	No
palayam	stock	stock	stock	stock	stock	stock
Erode						
Cigar	6.92	6.92	6.92	6.93	7.12	7.12

(Prices are in rupees per imperial maund of 82 $\frac{2}{7}$ lbs. i.e., equivalent to 3,200 tolas).

These figures are intended to convey the wide range in prices between raw and manufactured tobacco as also

* Figures from Marketing Report on Tobacco, p. 342.

³⁰ Figures collected from various issues of the Fort St. George Gazette.

Freight Rates

manufactured products. As the Report says, prices of different kinds of tobacco leaf range from about Re. 0-12-0 per maund to over Rs. 80 per maund. But what interests us as students of freight rates is that the railways do not make any distinction as between quality. The main heads of classification are 'Tobacco, country manufactured; Tobacco, country unmanufactured; and cigarettes.' Obviously, it does not take into consideration the value of different consignments coming in under the same class. *Thus, this is one example of how the value of service principle is lost sight of in practical rate making.* Needless to say, it would be very difficult for the authorities to make detailed examination of the quality of each consignment. If some system were adopted whereby each consignment was examined by some official Marketing and Grading Board and labelled according to quality, it might serve as a basis of rate charging. In the absence of this, it would be impossible to appraise the value of each consignment, since shippers would always like to pass their goods off as inferior quality.

The South Indian Railway handles a considerable volume of tobacco traffic. The main centres are Trivandrum, Trichinopoly and Dindigul. The following figures show the amount of its traffic in comparison with the figures for all class I Railways.

TOBACCO TRAFFIC (IN HUNDREDS).³¹

Year.	All class I Railways.		South Indian Railway.	
	Traffic in tons.	Earnings.	Traffic in tons.	Earnings.
		Rs.		Rs.
1933-34	478,1	75,91,4	402	46,13
1934-35	512,7	81,75,6	371	44,32
1935-36	499,6	80,79,7	326	40,85
1936-37	507,3	81,83,0	334	43,08
1937-38	519,1	84,33,8	364	46,11
1938-39	540,8	87,74,1	355	44,69

³¹ Figures collected from the Reports of the Railway Board.

Road-Rail Transport

These figures portray the position of the tobacco traffic through the years. It is clear from the above table that there has been a fall in the traffic from 40,200 tons in 1933-34 to 35,500 in 1938-39, the lowest being in 1935-36. But, though there has been a considerable shrinkage in traffic in 1937-38, the difference in earnings is not very much. Hence this leads us to the conclusion that in the absence of increased freight rates, the average distance travelled by a ton of tobacco must have been higher than what it was in 1933-34; since, though the traffic in 1937-38 has been less, the earnings are about the same. The South Indian Railway charges class-rates on tobacco; these have been referred to in a previous paragraph.* In addition, there are special station-to-station rates quoted for the easy movement of the traffic between particular stations.

For example, the rate per maund from Tinnevely Junction to Trivandrum Central or *vice versa* for country manufactured tobacco at Owner's Risk is Re. 0-6-0. The rates for unmanufactured country tobacco for the under-mentioned stations are as follows:

Station.	Station.	Rate.		
		Rs.	A.	P.
Coimbatore to	Palghat ..	0	2	2
Erode to	Palakodu-Dalavayhalli ..	0	4	0
	{ Chalakudi ..	0	3	0
	{ Irinjalakuda ..	0	2	6
Palghat to	{ Pattambi ..	0	2	0
	{ Pudukad ..	0	2	6
	{ Trichur ..	0	2	0
	{ Wadakancheri ..	0	2	0

For cigarettes, the rates are higher and a minimum specification is made of 160 maunds. The rate from Bangalore Cantonment to Podanur *via* Jalarpet is Re. 0-9-6 and to Trichy Goods Shed by the same route, Re. 0-11-1. Needless to say, these rates are much lower than what they would be at class rates.

* *Vide* p. 151.

Freight Rates

Tobacco transport is not confined to the jurisdiction of the South Indian Railway only. Considerable through traffic is booked and in this the M. & S. M. Railway shares to a great extent. The following are a few rates quoted for 'bidi' leaves.

Condi- tions.	From	To	Rate.			M.S.M.'s share.			S.I.R.'s share.		
			Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
W/81 O.R., L.,	Via Dronachalam for traffic from stations on the G. I. P. and N. S. Railways.	Calicut	1	12	0	0	14	7	0	13	5
		Ernakulam	1	12	0	0	14	4	0	13	8
		Mangalore	1	12	0	0	11	10	1	0	2
		via Jalarpet									
		Quilon	1	12	0	0	10	3	1	1	9
		Trivandrum Central (both via Arkonam)	1	12	0	0	9	9	1	2	3
W/100 O.R., L.,	Via Waltair ..	Calicut	1	8	0	1	0	1	0	7	11
		Mangalore	1	8	0	0	13	11	0	10	11
		Cannanore	1	8	0	0	15	2	0	8	10
		Ernakulam	1	8	0	0	15	11	0	8	1
W/100 O.R., L.,	Via Waltair ..	Quilon	1	8	0	0	12	3	0	11	9
		Tuticorin	1	8	0	0	13	2	0	10	10
		Trivandrum	1	8	0	0	11	9	0	12	3

The specifications in the first case viz., W/81 O.R., L., indicate that a minimum wagon load of 81 maunds is prescribed and that transhipment is at Owners' Risk, the condition being that loading and unloading should be done by the consignor and consignee. The same rules apply in the other two cases except that a higher minimum wagon load of 100 maunds is specified.

From the foregoing freight schedules, what is evident is that rates are quoted so as to facilitate movement of the commodity. In doing so, the same rates are quoted for varying distances. For example, the same rate of Rs. 1-8-0 is quoted in the second series of examples *i.e.* Calicut, Mangalore, Cannanore and Ernakulam. Ernakulam and Calicut are about equidistant, but Cannanore is much longer while Mangalore is the greatest distance. How then could a rate be charged that is just the same for a smaller as well as for a longer distance? This is yet another

Road-Rail Transport

example of how the distance factor shades into insignificance when long distance traffic is considered, more so, when the commodity has to be moved easily. It might here be noted that all the four places mentioned are ports, and this may afford partial explanation of this seeming anomaly. If the distance factor were to be scrupulously adhered to, then the railway freight rate should be correspondingly greater, and it might then be advantageous to send the tobacco by rail to Calicut and then ship it to Mangalore by water, since this might be cheaper. But it also must be noticed that though the through rate is just the same, the proportionate shares of the two railways that handle the traffic differ. Thus, in the case of Calicut, the S.I.R.'s share is only Re. 0-7-11 per maund while in the case of Mangalore it is Re. 0-10-1.

This study of tobacco prices and freight rates would be helpful to us in gauging the incidence of the latter on the former. The Marketing Report on Tobacco has made a study of the price spread of different types of raw tobacco. We might be allowed here to take a few examples from it; for, though the figures appertain to a period that is more than one year old, they are highly instructive. We shall later see how far their conclusions agree with those derivable from the foregoing data collected here. The percentages that will be referred to, denote the proportion of that particular item to the consumer's price. Taking up first the case of country tobacco grown by the Guntur producer and consumed by the manufacturer at Sukkur, we find that the net amount realised by the grower forms only about 75 per cent of the consumer's price. Marketing charges and packing and other charges account for about 3 per cent and the cost of transporting the consignment from the station to the merchant's godown is another 0-6%. Thus, transporting costs alone account for well over 20 per cent of which the railway charges alone is

15.5 per cent. Needless to say, this is very high, but in comparison with the incidence of freight on tobacco scraps shipped from Guntur to Lahore, this is nothing. The cost per maund of such broken tobacco at Lahore is Rs. 8-6-6. Of this the Guntur man gets only Rs. 3-1-6 which is 36.8 per cent of the former. The railway freight comes to Rs. 4-12-0 which is 56.5% of the consumer's price. Such a high percentage is shocking, but the disproportion would be all the more glaring if we calculated it, not in terms of the consumer's cost, but in terms of the shipper at Guntur. Calculating that way, the freight charge would come to nearly 150%. No wonder then that the standing complaint against Indian railway rates is that they are highly regressive. While this is an extreme instance, the more general percentage of incidence is round about 20. The producer in the Charator area whose market is in Jubbulpore obtains Rs. 5-10-0 for an imperial maund of bidi tobacco. The costs of distribution amount to 41.8 per cent of the final price. The railway share amounts to Rs. 2-3-0 and this is equal to 22.6 per cent. The Lahore consumer of Hookah tobacco getting his goods from Delhi bears a 20 per cent freight charge. Though, on an average, the percentage fluctuates round about this figure, there are cases wherein the proportion falls to as low as 2.5 per cent as in the case of Mysore tobacco transported to Bangalore. The reason for this is easily explicable; it lies in the comparative shortness of the distance travelled.

Referring now to prices in the Madras Presidency, during the last four months of 1939 and the first two months of 1940, we observe that during the first four months the prices for Guntur 'Virginia' and Local, Erode 'Air cured' and Erode Cigar tobacco have been steady at the figures Rs. 15.52, 4.14 and 6.92 respectively. During the current year *i.e.*, 1940 the prices of Guntur tobaccos have shot up to Rs. 30.45 and Rs. 6.99 respectively, and Erode Cigar tobacco has risen by 0.2 of a

Road-Rail Transport

rupee in value. The only case of a fall in prices is that of Erode ' Air Cured ' where there has been a fall of nearly 22 per cent in value. As against these, we have freight rates ranging from Rs. 1-12-0 to Re. 0-2-0 per maund. The former rate applies to traffic incoming from stations on the G. I. P. and N. S. Railways and proceeding to Calicut, Mangalore and Ernakulam, Quilon and Trivandrum *via* Dronachalam, Jalarpet or Arkonam, as the case may be. While these high rates apply to through traffic, the rates on local booking are necessarily low, since the distance is less. Thus, the freight from Coimbatore to Palghat is only Re. 0-2-2 per maund and that from Erode to Palakodu is Re. 0-4-0. The rate on country manufactured tobacco from Tinnevely to Trivandrum is only six annas. If we were now to equate the highest freight rate of Rs. 1-12-0 on through booking in terms of Guntur local tobacco at the current rate, we find that it would form 25 per cent of the price. Allowing for a lower freight rate, since Guntur is much nearer than Waltair, we find that the rate cannot be less than 15 per cent., which is high enough. Taking the case of Erode Cigar tobacco, which now fetches Rs. 7-12 per maund, we would find that if it were transported, say to Palakodu, it would have to bear a rate of 4 annas per maund; that would work out to just about 4 per cent. It is thus seen, both from the conclusions arrived at in this and in the preceding paragraph, that the incidence varies with quality and distance travelled. It might be as high as 56 per cent, or as low as two per cent. But since tobacco moves over long distances from the growers to the manufacturing centres or the ports, lower rates might be advantageously quoted in the case of long distance through traffic. As regards the present freight increase of $12\frac{1}{2}$ per cent on all goods, though it might be argued that it is inevitable as a result of the inflation in prices and the increase in transportation costs, nevertheless, it is exceed-

ingly bad policy to enhance rates even before the advantages accruing therefrom have filtered down to the producers and manufacturers.

Before we conclude this section, we must make a reference to transport of tobacco by road. Tobacco is a commodity that is easily packed and light in comparison to its bulk. As such, it lends itself to transshipment by road motor vehicles. The advantages arising out of quick transport, easy handling and loading, and guarantee against loss from pilfering, make them an excellent means of conveyance. With the increase in the competition that motor lorries offer, the railways have a hard task to perform. The Marketing Report points out that such competition is keenest in the Nipani area of the Bombay Presidency. The Report ascribes it mostly to geographical location, since Nipani is not a railway station. This place is well connected with Kolhapur, Chikkodi and other places by good motorable roads, and the charge for carrying 60 to 80 bags of tobacco from Nipani to Bijapur comes to about Rs. 32 to 40 per trip. The Report says that the charge for carrying a bag of tobacco from Nipani to Dharwar, a distance of 97 miles, comes to only ten annas which is much cheaper than railway transport. In the Trichinopoly district of this Presidency, there has been considerable diversion of traffic to the road, so much so the Madras Chamber of Commerce appealed to the South Indian Railway authorities to effect a reduction in rates. The Railway refused to accede to their demand, and their reply is worth quoting:

“ The question of adjusting the railway freight rates in competition with lorry traffic from Madras to Trichinopoly has received my constant consideration. Lorry competition is not confined between Madras and Trichy only. It is spread all over the area served by this Railway. Any adjustment of railway freight rates between two

Road-Rail Transport

points, for the reasons of this competition often brings in requisitions for similar concessions, and refusal to meet such request is likely to lead to dislocation of trade and traffic.”³²

We have in this section made a brief study of the position of the tobacco industry with particular reference to the incidence of railway rates on costs. From this, we have been led to the general conclusion that, what with the high incidence figure with regard to long distance through-traffic and what with the present diversion of traffic to road motor lorries, the railways could lower their freight rates so as to give the industry the benefits of a cheap and efficient means of transport.

LINSEED.

Oil seeds constitute an important factor of our trade. We are one of the largest suppliers to the world, and between the years 1931 and 1935 nearly 94% of our Linseed crop was exported to foreign countries. While we hold such a position of importance, it is rather distressing to note that we do not make the best use of it and there is a good deal of uneconomic production. That is because our methods of oil extraction are still primitive, and, in consequence, the seeds are exported as such without being crushed. Needless to say, such a procedure is not in our interest as we thereby lose an important bye-product, the oil cake, which has great fodder value. The conservation of this important cattle food would confer a boon on the poor agriculturist who has to carry on his cultivation with the aid of emaciated animals. Apart from the loss of this important bye-product, the cost of shipping seeds as such would be much greater than that of oil, though the rate of charge for the latter would necessarily be higher. In the country side, ‘ghanis’ or oil presses driven by bullocks are used to crush the

³² Madras Chamber of Commerce Annual Report for 1938.

seeds. There is considerable wastage in this method and there is need for a better type of press to be used. The All-India Village Industries Association has devised a new type of *ghani* whereby wastage is supposed to be minimised, as the motive power is less. By making it possible for the bullock to perambulate at a convenient height, the pressure of the yoke is lessened, thus calling for less effort on the part of the animals. Whatever be the merits of such a device, which unfortunately is at present only of exhibition value, it cannot be as efficient as the regular power-driven mills. The importance of the oil crushing industry can be better realised when it is pointed out that nearly 42 per cent of the crop is put to this use. For example, during 1934-37 out of an average total supply of 488,000 tons, imports accounted for 12,000; 233,000 tons were exported and 27,000 were used for domestic consumption. Setting aside 26,000 tons for seeding purposes, and 2000 tons for wastage, 20,000 tons would have been absorbed by the oil extracting industry. (The figures are an average for the years 1934-35 and 1936-37).

There is an unfortunate lack of correct statistics as far as this crop is considered. Nevertheless, its importance can be gauged from the following figures taken from the Report on Linseed prepared by the Agricultural Marketing Department:—

ACREAGE UNDER LINSEED IN THE MAIN
PRODUCING AREAS. (THOUSAND ACRES).

	Average. 1925-26 to 1929-30.	Average. 1930-31 to 1934-35.	1935-36.	1936-37.	1937-38.*
<i>British India.</i>					
Bengal	127	123	98	131	137
Bihar and Orissa	649	638	549	559	595
Bombay	116	130	113	101	107
Central Provinces & Berar	950	923	1131	1131	1243
Punjab	29	29	28	31	30
United Provinces	938	877	845	898	948

* Provisional (final forecast).

Road-Rail Transport

ACREAGE UNDER LINSEED IN THE MAIN PRODUCING AREAS. (THOUSAND ACRES).—(contd.)

	Average. 1925-26 to 1929-30.	Average. 1930-31 to 1934-35.	1935-36.	1936-37.	1937-38.*
<i>Indian States.</i>					
Central Provinces States	95	99	130	130	130
Hyderabad	245	319	416	468	471
Kotah (Rajputana)	74	87	94	94	107
Others	8	33	53	51	71
Total	<u>3,231</u>	<u>3,258</u>	<u>3,457</u>	<u>3,594†</u>	<u>3,839</u>

* Provisional (final forecast).

† Revised figure 3,677.

It will be seen from the foregoing figures that there has been a steady increase in the acreage under this crop. The largest single producing province is the Central Provinces with an acreage of 1,243,000; the United Provinces are second with 948,000; and Bihar and Orissa come third with 595,000. In the case of the second and third, there has been a steady shrinkage from 938,000 and 649,000 in the quinquennium 1925-30 to 898,000 and 559,000 acres respectively in 1936-37. Hyderabad is the largest producing Native State and here the acreage shows a marked tendency to increase, so that in 1937-38, the area is nearly double what it was on an average during the quinquennium 1925-30. These figures, it must be borne in mind, refer only to the main producing tracts and not to the whole of India.

The average yield per acre based on the Estimates of Area and Yield was 261 pounds in 1936-37; the All-India average based on revised figures of acreage and production was 265 for the same year, thus indicating a difference of 4 lbs. This slight difference is magnified to an enormous extent when the total yield is considered. Basing our calculations on the Estimates of Area and Yield, we find that the average production for the main producing areas

for 1925-30 was 372,000 tons; 399,000 for 1930-35 and 457,000 tons for 1937-38. But, if calculations were to be made on the revised figures, we find the corresponding figures are 441,000, 474,000 and 478,000 respectively and 475,000 for 1936-37. Thus, there is a clear difference of 69,000 tons and 75,000 in the figures for the average for 1925-30 and 1930-35 respectively.

The main competitor with India in its export of linseed is Argentine, since she controls nearly 80% of the world trade in the commodity; India's share is only about 16%. It is, however, interesting to note that our exports to the United Kingdom have been increasing, thanks to the preferential treatment accorded us under the Ottawa Pact. In 1925-26, our exports to the United Kingdom were 111,000 and in 1936-37 nearly double *viz.* 218,000. Our total exports to the British Empire rose from 132,000 tons to 243,000 for the same years. In 1937-38 our total exports fell to 226,500 tons but again rose to 318,300 in 1938-39. The following figures tell their tale:—

EXPORTS OF LINSEED FROM INDIA
(BRITISH INDIAN PORTS).

IN THOUSANDS OF TONS.

	1925-26	1928-29	1931-32	1934-35	1935-36	1936-37
1 Total British Empire	132	41	24	132	100	243
2 United Kingdom	111	18	14	104	90	218
3 Total European countries	172	93	77	40	34	36
4 Total foreign countries	176	116	96	106	65	53
5 *Grand total	308	157	120	238	165	296

Apart from our exports of Linseed, considerable quantities of oil have been exported. For the same years as above, our export figures were (in thousands of gallons)

* *N.B.*—The Grand total is arrived at by adding the figures for the British Empire and those for foreign countries as figures for 2 and 3 are included in 1 and 4.

Road-Rail Transport

75, 47, 38, 64, 78 and 135. The worst year was therefore 1931-32 when both our exports of the seed and oil fell to very low figures *viz.* 120,000 tons and 38,000 gallons. Seventy-two thousand tons of oil cake were exported in 1935-36, and in 1936-37, 50,000. Our chief market for the cake has been the United Kingdom, which alone accounted for 70,000 and 47,000 tons for the two years. The sudden improvement in 1934-35 over 1931-32 needs explanation. It has already been pointed out that Argentine is our chief competitor, though viewed from the stand point of quality, the oil content of Indian linseed is much higher. There are two varieties of Indian seed—the Bombay Bold with an oil content of 135 grains per gramme; Calcutta Bold is smaller and has about 145 to 153 grains per gramme. With the falling off in our exports and the increasing competition of Argentine, the situation became serious and particularly acute just at the time of the Ottawa Conference. It was therefore thought that something must be done to give the commodity a fillip and this was effected in the shape of a 10% preference to the Indian seed. Coincident with this artificial stimulus, there was a crop failure in Argentine for the two years succeeding 1932, so that our exports shot up and the linseed trade was placed on its old footing.

Apart from our rich export trade, there is considerable internal trade in this commodity. Nearly two and a quarter lakhs of tons are available for local consumption. The demand, however, depends upon the reigning prices. Mustard oil is an important adulterant for industrial uses. So that when linseed prices are high, recourse is had to mustard oil. It is largely used for culinary purposes and its demand as an edible oil is highest in the Central Provinces which has the largest acreage under the crop. The greatest competitor of linseed is groundnut which will be taken up for consideration later. Thus, it is clear

that the demand for this particular oil seed depends upon the prices of the others. In 1931-32, the price per maund of linseed at Calcutta was Rs. 10-4-8; mustard oil was costlier by Rs. 4-1-8 and groundnut oil was selling at Rs. 12-15-0. The effects of the depression are seen in the falling prices of all three of them, and in 1933-34 they were at the lowest level; the prices being Rs. 11-0-2, Rs. 8-5-0 and Rs. 9-11-0 for mustard oil, linseed oil and groundnut oil respectively. Since 1934-35, there has been an upward tendency; and in 1937-38 the corresponding prices for the three kinds of oilseeds were Rs. 16-15-0, Rs. 13-2-0 and Rs. 13-15-6. Hence, of the three, linseed oil continues to be the cheapest having a comparative advantage of Re. 0-13-6 over groundnut oil and Rs. 3-13-0 over mustard. It is therefore much in demand and has an important share in the rail and river-borne trade of India. Taking the average figures for 1934-37, we find that 2,47,400 tons were carried into the various provinces and, in this, the share of Bihar and Orissa was largest. That Province exported 75,200 tons of which Bengal alone took 74,300 tons. The United Provinces come second with a total export of 68,900 tons, of which Bombay accounted for 20,600 tons and Bengal for 45,400. The Native State of Hyderabad comes third and was able to carry on a trade of 41,900 tons, 40,400 of which were sent to Bombay alone. Thus, of the total trade of 247,400 tons, Bengal consumed 121,900 tons and Bombay 112,600 tons. These figures reveal the importance of the internal trade in linseed.

Linseed is transported by rail, river and road, but the greatest single agent of transportation is the railway. The railways were able to carry 247,000 tons on an average during the three years, 1934-37. In the previous paragraph we have seen that the total trade carried by rail and river during the same period amounted to 247,400 tons,

Road-Rail Transport

thus leaving a niggardly 400 tons for the share of the rivers. Linseed is carried on three different classes of freight rates: class, schedule and station-to-station rates. In the general goods classification, it is placed in the first class to which a maximum rate of 0.38 pie per maund per mile is chargeable, the minimum being 0.100. The schedule rates which are less than the class rates vary from one railway to another. On the East Indian Railway the following schedule rates are charged:—

For the first 100 miles—0.333 pie per maund per mile.
Plus for the first 75 miles—0.380 pie per maund per mile.

Plus from 76 miles to 300 miles—0.200 pie per maund per mile.

Plus for distances above 300 miles—0.100 pie per maund per mile.

But the most important class of rates are the station-to-station charges which are specially quoted to facilitate handling of traffic in bulk. The Marketing Report on Linseed gives the following specimen rates:—

RATES PER MAUND.³³

From	To	Railway.	Distance miles.	Station to station rates.			Calculated at scheduled rates.			Calculated at class rates.		
				Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Basti (U. P.)	Howrah	B.N.W.	248									
		E.I.	281	0	8	10	0	12	10	1	2	7
			529									
Dighwara (Bihar)	do.	B.N.W.	78									
		E.I.	283	0	6	5	0	7	6	0	11	5
			361									
Raipur (C. P.).	Bombay	B.N.	190									
		G.I.P.	518	0	14	1	1	3	3	1	7	9
			708									
Nagpur (C. P.)	do.	G.I.P.	320	0	8	5	0	13	3	1	1	10

³³ Report on the Marketing of Linseed, p. 170.

It will be seen from the foregoing examples, that this class of rates is the lowest. In quoting such rates, the volume of traffic that emanates from any particular place is the most important. It has been seen that the United Provinces, the Central Provinces and Bihar and Orissa together share a great part of the traffic, so that we find special rates being declared. Where there is traffic moving to the ports, the need for such special station-to-station rates is keenly felt. Bengal and Bombay, we saw, accounted for 49·3% and 45% respectively of the rail and river-borne traffic. Raipur is a distance of 708 miles from Bombay, for which at the ordinary first class rate the freight per maund would be Rs. 1-7-9 and at the telescopic rate Rs. 1-3-3. But the special station-to-station rate offers a concession of Re. 0-9-8 per maund *i.e.* nearly 42% of the class rate. So too Nagpur, which is 520 miles distant, gets a concession of more than 50%, the class rate of Rs. 1-1-10 being more than double the station-to-station charge of Re. 0-8-5. A 50% concession is shown in the case of traffic moving from Basti to Calcutta.

A study of market prices is an essential pre-requisite for estimating the incidence of railway freight on linseed. In 1932-33, the average price of Bombay Bold was Rs. 4-5-10 and Calcutta Small Rs. 3-15-5. The reigning prices in 1937-38 were Rs. 5-13-9 and Rs. 5-14-6 respectively.* Taking the highest quotation, we find that Ranipur linseed has to bear a freight charge which is 15% of the Bombay price per maund. It would be interesting if we could take a few more examples for consideration. The incidence necessarily varies with the distance. For example, the Orai producer who ships a maund of linseed to Bombay has to bear a freight charge of Re. 0-11-5

* *N.B.*—In 1939, the price per cwt. of Bombay Bold was Rs. 2-4-0, so that, if this figure were to be compared with, the incidence of freight rates would be much higher than what it is made to appear.

Road-Rail Transport

which is 15·4% of the consumer's price at Bombay. The Dharbanga producer catering to the Calcutta market has to pay Re. 0·7·8 which amounts to 10·3% of the consumer's price, whereas the Chuadanga producer escapes with only 2·6%, as his freight bill for a maund comes to only 0·1·11. Speaking roughly, for a distance of about 550 miles the freight charge would constitute about 10% of the consumer's price. In trying to appraise the justifiability of a rate, it is not sufficient if freight alone is considered. The consumer has to bear a host of other charges which come to nearly 30% of the price he pays. Let us take the Hyderabad producer who sends his linseed from Aurangabad to Bombay, which is his nearest port. His price is Rs. 3·8·0 per maund, which is 73·9% of the price the consumer has to pay at the other end. The handling and cartage charges come to 1% of the consumer's price, bagging, handling and transportation charges from market to station come to another 8%. Thus his total distribution charges come to 23%. In the case of the Orai producer, he is hit much harder and his total distributing charges come to 27·7%. Of this the railway freight to Bombay amounts to 15·4%. Adding this to his total transportation charges, we come to the rough figure of 18% which is regressive enough. With the present increase of 12½% in freight rates, the incidence is bound to be much greater; but, of course, allowance must be made for an increase in consumer's price also. Therefore, in the case of long distance traffic offering itself in large quantities to important distributing centres, what is needed is a more liberal quotation of station-to-station rates so as to facilitate easy movement of traffic. Ten per cent should be a very desirable proportion for the freight charge. If the railways could achieve that they would deserve our sincerest thanks.

There is infinite scope for reduction in the incidence of the railway charges even without a scaling down of the

rate schedule. The standing complaint against linseed exports is that they contain a large amount of foreign matter which has no value; contrariwise, they tend to depress prices and to place our commodity at a discount in the international market. Instances have been known of consignments being returned because of their high content of foreign matter. Sometimes, such impurities are mixed together purposely by producers so as to gain in weight. This is a highly condemnable practice, since the action of a few such corrupt individuals places a stigma on the entire exports. Moreover, what appears to be a slight gain is an actual loss. The Marketing Report on Linseed estimates the amount spent on transporting these impurities at well nigh Rs. 3 lakhs. These impurities are of three kinds;³⁴ they may consist of non-oleaginous impurities, oleaginous impurities *i.e.* other oil seeds used as adulterants, and damaged linseeds. The Agricultural Departments have taken samples of linseeds from different parts of India and have arrived at the percentage contents under these heads. Taking a sample from North East Bihar, they found that on an average there was 8.06% of foreign matter, 1.95% of other oil seeds and 2.82% of damaged seeds, thus making an aggregate of 12.83%. In the case of shipments for export from Bombay, the corresponding percentages were 2.32, 0.08 and 2.59 respectively. To quote the Report, "The average percentage of foreign matter found in samples collected from different Provinces and States in India has been found to range between 1.59 and 8.06 per cent, although individual samples and averages for different districts have shown a much wider variation, the extreme limits being 0.24 and 25.70."³⁵

³⁴ **Marketing of Linseed**—Appendix XXXI, p. 311.

³⁵ *Ibid.*—Chapter VI, p. 126.

Road-Rail Transport

We have hitherto been considering the freight on linseed as such. It would now be advisable if we could find the rates on oil cake and linseed oil so as to gauge the relative costs of shipping linseed and oil. Linseed oil cake is placed in the same class as linseed for which the rate applicable is 0.38 pie per maund per mile, while linseed oil is placed in the fourth class, for which the higher rate of 0.62 pie is charged. Linseed oil, not otherwise classified, is classed 2A in the General classification, if at railway risk, and second class if carried at owner's risk. On certain railways, linseed oil is carried under scheduled rates. The North-Western Railway offers the C/J rate for a minimum wagon load of 300 maunds at owner's risk. This rate works out as follows:—0.38 pie for distances up to 150 miles; for distances above 150 miles and below 250 it is 0.333, plus 0.200 pie for the next 200 miles. For 501 to 700 miles the rate comes to 0.130 and for distances above 700 miles the rate is 0.1 pie per maund per mile. The South Indian Railway makes exceptions in the case of linseed oil. Linseed as such is classified under the general head of common seeds for which the schedule rate is CA/CK, the conditions being that the distance should be not less than 51 miles, and that a minimum consignment of 400 maunds is necessary on the Broad gauge and 270 on the Metre gauge, loading and unloading to be done by the parties concerned. Apart from the schedule and class rates, a considerable volume of trade moves under station-to-station rates. These rates are quoted only on those railways where there is considerable traffic offering, so that on the South Indian Railway where linseed traffic is next to nothing we have no such special rates. But on other railways where this traffic is heavy, numerous such rates are quoted of which the following taken from the Marketing Report on Linseed are typical.³⁶

36 Marketing of Linseed—Report, p. 238.

Freight Rates

From	To	Railway system.	Distance.	Station to station rate.	Calculated at scheduled rate.	Calculated at class rate.
<i>Linseed Oil:</i>				Rs. A. P.	Rs. A. P.	Rs. A. P.
Cawnpore	Howrah	E.I.	630	0 14 11	..	1 6 11
Aligarh	do.	E.I.	823	1 3 0	..	1 12 10
Aligarh	Patna	E.I.	485	0 14 6	..	1 1 10
Patna	Howrah	E.I.	338	0 10 9	..	0 11 10
Bombay	Madras via Raichur	G.I.P. M. & S.M.	443 351	0 15 7	..	1 11 0
<i>Linseed Cake:</i>						
Nagpur	Bombay	G.I.P.	520	0 5 4	0 4 4	1 0 6
Nagpur	Vizagapatam	B.N.	516	0 5 9	0 4 4	1 0 4

The foregoing table clearly shows the relative concessions shown by the declaration of these rates. The freight rate for Cawnpore to Howrah which at the class rate is Rs. 1-6-11 is only Re. 0-14-11 at the special rate *i.e.* it is nearly 70 per cent of the former. But in the case of Patna to Howrah, the concession is much less, amounting to only an anna and a pie. The Bombay to Madras freight charge is only about 58 per cent of that at the special rate. The price of a maund of linseed oil during 1937-38 was Rs. 13-2-0. Suppose, then, a maund of oil was transhipped from Aligarh to Howrah, then it would have to pay Rs. 1-3-0 towards transporting costs. This would therefore amount to 9 per cent of its cost. If, however, the price of Rs. 11-12-2, current during the previous year, were taken, the incidence would be higher—*viz.* nearly 10%. In the case of short distance traffic that moves over a less distance and pays corresponding lower freight charges, the proportion that this bears to price of the commodity is smaller.³⁷ Comparing the two rates on a maund of oil from Patna to Howrah, we calculate the incidence at only 5.2 per cent. So too the price of linseed cake, which comes to only 50 per cent of linseed price *i.e.* Rs. 2-15-4 per maund, has to bear a fairly high incidence. The freight charge from Nagpur to Vizagapatam on the Great Indian Peninsular Railway system is Re. 0-5-9 per maund which, in terms

37 Marketing of Linseed—Report, p. 238.

Road-Rail Transport

of the price for the oilcake, comes to nearly $12\frac{1}{2}$ per cent which is high enough, when the value of the commodity is considered.

The Report makes a study of the general expenses of a large dealer and, since it is always more accurate to gauge the degree of incidence and its regression when heavy traffic is considered, it would be profitable if we could look into the expenditure bill of a typical oil mill at Nagpur on 105 bags of linseed despatched from Pipariya in the Central Provinces.³⁸

	Rs.	A.	P.
Cost of 232 maunds 1 seer linseed			
@ 4-7-0 per maund	1,029	9	9
Cleaning at Re. 1 per 100 bags ..	1	0	9
Weighing at Rs. 1-8-0 per 100 bags ..	1	9	3
Cost of bags at Rs. 22-12-0 per 100 bags	23	14	3
Twine at Re. 1 per 100 bags ..	1	0	9
Commission @ Re. 0-12-0 per cent ..	7	11	6
Dharmada @ Re. 0-1-0 per cent ..	0	10	6
Carting to Station at Pipariya @			
Re. 0-0-6 per bag	3	4	6
Station expenses at Pipariya ..	2	0	0
Railway freight @ Re. 0-7-8 per maund on 235 maunds gross ..	112	10	0
Terminal tax at Nagpur @ 3 pies per maund	3	10	0
Station broker at Nagpur ..	0	4	0
Cartage at Nagpur @ 9 pies per bag ..	4	14	9
Hundi charges @ 0-2-0 per cent ..	1	5	0
Total ..	1,193	9	0

³⁸ Marketing Report on Linseed, p. 188.

Freight Rates

It will be seen that out of a total expenditure of Rs. 1,193-9-0, the transportation expenses alone come to Rs. 126-11-3 inclusive of the four annas paid to the station broker, or 10·5 per cent of the total costs. Of this sum the railway freight alone accounts for Rs. 112-10-0 or 9·4 per cent of the total costs.

In conclusion, we might note that it is cheaper to ship the commodity as seed than to send it after it has been crushed. The average yield of oil for a maund of linseed is $\frac{1}{3}$ of a maund, the other $\frac{2}{3}$ ths being oil cake. Taking 3 maunds of linseed, the freight charge for it from Nagpur to Bombay at the rate of Re. 0-8-5 per maund would come to Rs. 1-9-3. Contrariwise, the freight on a maund of linseed oil for the same distance comes to Rs. 1-3-6 and that on two maunds of the oil cake would be Re. 0-8-8, thus making an aggregate charge of Rs. 1-12-2 which is Re. 0-2-9 costlier than the former. It would thus be advisable to send the commodity uncrushed for purposes of export. This explains in large measure the concentration of large oil crushing mills at important ports like Bombay to which large consignments are sent for crushing prior to export. Out of a total number of 123 linseed-oil crushing mills, 8 were located in Bombay while the Central Provinces accounted for 41 and Bihar and Orissa for 26 mills.

This concludes our study of the conditions of linseed transport. A study of the freight rates in relation to the commodity prices was undertaken, and the comparative advantages of sending linseed crushed and uncrushed were appraised. The final conclusion that we now reach is that while the rates are not unduly regressive, much economy could be effected by a wise process of standardisation and greater attention being paid to purity of the commodities so transported.

GROUNDNUTS

Among the oil seeds produced in India, groundnuts occupy a very high place in our agricultural economy and are only second in point of importance to linseed.* It is a very valuable oil and has a large demand for commercial uses. In the Madras Presidency it is much used for human consumption and is a serious competitor of gingelly oil. The Madras Presidency ranks first in the raising of this crop and has a very important share in the foreign trade of the commodity. The relative position of this Presidency can be gauged from the following figures which give the acreage for the Presidency as against the whole of India as also the estimated yield for all-India:—

Year.	Area under cultivation (in acres).	Area under cultivation in Madras Presidency.	Estimated yield in tons (nuts in the shell) for Madras.
1926-27	3,863,486	2,680,000	..
1927-28	4,700,241	3,366,536	1,671,000
1928-29	5,401,342	3,679,349	1,830,000
1929-30	5,012,393	3,209,315	1,522,000
1930-31	5,310,454	3,575,157	1,765,000
1931-32	4,226,008	2,635,427	1,234,000
1932-33	5,467,973	3,517,000	1,729,000
1933-34	5,948,891	3,779,365	1,777,000
1934-35	4,043,824	2,350,934	920,000
1935-36	4,306,745	2,519,965	1,202,000
1936-37	..	3,427,000	1,652,000

(Figures compiled from the Agricultural Statistics of India, Vol 1 and Estimates of Area and Yield of principal crops in India).

From the foregoing table, it is seen that the Madras Presidency itself accounts for a very large acreage. In

* For further details see "Marketing of Groundnuts" by Dr. B. V. Narayanaswamy.

1927-28, the percentage of this to the total acreage in India was about 72, while in 1931-32 it came down to 62 per cent. It is also noticeable that since 1926 there has been a continuous increase in acreage till 1930-31, with the solitary exception of 1929-30 when there was a slight fall over the previous year's figure; and subsequent to 1930 there was a fall in the succeeding year only to be followed by a sharp rise in the next two years and a steep fall in 1934-35 and 1935-36. The yield has been lowest in the year 1934-35, and the figure for 1935-36 very nearly approaches that for 1931-32. In 1936-37, however, there has been a great increase both in acreage and in yield, the respective figures being 3,427,000 and 1,652,000.

Of the total crop grown in India, a vast part of it finds its way to the ports for shipment to foreign countries, so that India holds the first place in the international trade of that commodity. The following figures give both the volume and value of the exports of groundnuts. The figures are in thousands of tons and rupees.

Years.	Quantity (in thousands of tons).	Value (in thousands of rupees).
Pre-war average ..	212	3,52,57
War average ..	119	1,91,17
Post-war average ..	195	5,61,97
1935-36 ..	413	6,65,10
1936-37 ..	739	12,28,57

Taking quantity, we find that the war and post-war averages are considerably below the pre-war average. That is the natural result of the serious dislocation of agriculture and industry engendered by the world cataclysm. In 1935-36, there was a doubling of the pre-war average and in 1936-37, there was an increase of nearly 79% over the previous year; and when it is compared with the pre-war average, the increase is nearly 250 per

Road-Rail Transport

cent. The figures for value tell a similar tale, and the value of exports in 1935-36 was nearly double the pre-war exports. In 1936-37 there was another doubling over the previous year's figure. While this has been the volume of the trade for the whole of India, the exports of ground-nut kernels for Madras Presidency are shown below:—

FIGURES ARE IN 1,000'S OF TONS.

Year.	Tons.	Year.	Tons.	Year	Tons.
1918	8	1925	370	1932	350
1919	70	1926	318	1933	455
1920	86	1927	472	1934	436
1921	209	1928	584	1935	332
1922	225	1929	583	1936	639
1923	224	1930	457		
1924	330	1931	496		

From this it can be seen how phenomenal has been the growth of the trade in this commodity. The exports in 1918 were only 8,000 tons and in 1936 they were 639,000 tons, *i.e.*, an increase of 8,000 per cent which is something colossal. Export figures have a general tendency to increase till we reach 1929 and, thereafter, the mal-effects of the depression are evidenced in the shrinkage of exports. The exports for 1936 are a record for the nineteen years recorded here.

Our best market for this oil seed is France. Germany comes second with Belgium and Italy third and fourth respectively. The relative share of these countries in the export trade of India is portrayed below:—

EXPORTS (IN HUNDREDS OF TONS).³⁹

Destination.	Pre-war average.	War average.	Post-war average.	1935- 1936.	1936- 1937.
France	169,1	87,5	126,8	140,7	162,9
United Kingdom	1,9	8,3	13,3	62,4	91,0
Belgium	15,3	6	14,0	9,2	26,5
Italy	7	2,9	14,6	17,8	62,0

³⁹ Figures compiled from the Madras Chamber of Commerce Report for the month of December 1939.

Freight Rates

Destination.	Pre-war average.	War average.	Post-war average.	1935- 1936.	1936- 1937.
Germany	7,4	8	12,2	71,3	84,5
Netherlands	1	..	7,3	95,2	128,8
Other countries	17,3	18,6	7,0	16,0	29,3
For orders' cargoes	..	..	..	..	154,5
Total	211,8	118,7	195,2	412,6	739,5

There has been a reshuffling in the importance of the various markets in our external trade. In the pre-war period, France headed the list; Germany came next followed by Belgium and Italy. During the war, Italy claimed the second place and in the post-war period the intakings of the United Kingdom, Belgium, Italy, Germany and the Netherlands all rose. In 1935-36 the Netherlands shot up to the second place and Germany came third with the United Kingdom fourth. In 1936-37 the positions of Germany and the United Kingdom are reversed. The Netherlands consumed nearly a sixth of our total exports. What is then obvious is that France has always continued to occupy the first place and that the United Kingdom's intakings have increased nearly fivefold during the whole period.

Let us now proceed to briefly study the prices of groundnut.* It must, at the outset, be remarked that there are no marked seasonal fluctuations, the prices always exhibiting a tendency to keep steady. Nevertheless, the prices rise to a maximum about August-September and register a fall in December, whereafter there is a rise. Thus, for example, if the August price were about Rs. 46-8-0 per candy, the December price may be about Rs. 41; the range is therefore within a comparatively short ambit. More generally, the price of groundnut depends to a very large extent on

* Since writing this groundnut prices have gone down alarmingly so that the Central Government contemplates restriction of production as a palliative.

Road-Rail Transport

the price of other oilseeds. In our study of linseed,* we made the observation that both mustard and groundnut oil are used as adulterants of linseed oil and that, of these three, linseed oil was the cheapest. In 1937, the price per maund of mustard oil was Rs. 16-15-0, of linseed oil Rs. 13-2-0, and of groundnut oil Rs. 13-15-6. As linseed and mustard are not of importance in Madras, the only other oilseed that offers serious competition to groundnut is cocoanut. Consequent upon the recent researches made in the commercial possibilities of groundnut, its importance has been so great that it has led to the diminution in the exports of copra and cocoanut oil. This is largely due to its efficiency as a cheap substitute. There has been, recently, a fall in the price of groundnut as the conditions of its exports have been hampered by the restrictive legislation passed by France on groundnut produced in other than its own colonies.

Mr. P. J. Thomas, in his interesting paper on commodity prices in South India, has deduced the average monthly values of Madras prices of machine decorticated groundnuts. The years 1922-25 have been taken as the base period and the prices refer to a French candy of 500 lbs.

PRICE OF GROUNDNUT KERNELS.⁴⁰

Year.	Price.	Indices of prices.	Three yearly moving average.
1922	63·8	99	..
1923	64·9	101	100
1924	64·7	100	97
1925	57·3	89	90
1926	52·0	81	84
1927	52·8	82	82
1928	54·4	84	81
1929	49·5	77	72
1930	35·6	55	58
1931	27·6	43	51

* *Vide* pp. 166 & 167.

40 *Vide* Commodity prices in South India: P. J. Thomas.

Freight Rates

Year.	Price.	Indices of prices.	Three yearly moving average.
1932	35.1	54	45
1933	24.9	39	42
1934	20.9	32	42
1935	35.7	55	47
1936	35.4	55	..

There is a certain steadiness in the prices during the base years 1922-25 but, thereafter, they continuously fall and in 1931 reach the low level of Rs. 27-10-0 and an index number of 43. In 1932 there is a rise in value of Rs. 7.5; there is again a fall in the succeeding couple of years and the prices are lowest in 1934. Thereafter, there is an improvement and the index number for 1936-37 takes an upward turn and reaches 55. It is noticeable also that, despite the fall in prices, there was a considerable increase in the volume of exports. This illustrates the great truth that a country with low prices is a good place to buy from and a bad place to sell in. Moreover, the outturn of an acre under groundnut was better than that for any other crop, so that we find that inspite of the remarkable drop in prices, there is an increase in acreage under cultivation. We might recall to our mind the Marshallian example of the housewife debating within herself whether it would be worth while to devote more wool in the knitting of vests than of socks, thus exemplifying the strength of the law of substitution. So too, it is only at the margin that the cultivator is in doubt whether he should sow his acre with groundnut or any other crop, and in doing so, he has to carefully examine the outturns that he could expect from each of them. Thus, the fact that there was a great increase in the area under this particular crop only shows that its cultivation was more paying than that of any other.

During the last two months of 1939, the market for groundnuts was fairly steady. The average wholesale

Road-Rail Transport

prices for standard varieties were, for a candy of 530 lbs., between Rs. 28 to Rs. 30-15-0 at the various centres on the 30th November 1939. The prices on the 22nd December 1939 fluctuated within a very narrow margin, the prices for the main producing centres being Rs. 28 and Rs. 28-2-0. It must, however, be admitted that the advent of the present war has wrought some changes in general prices, and agricultural prices of primary crops have shown fairly marked increases. Comparing the prices prevailing as on the 28th of August and the 28th of December 1939, we notice a 14.5 per cent increase in the case of Nandyal unshelled groundnuts. Cuddalore machine-shelled variety registers a fall of 3.3 per cent. In the case of the other oilseeds also there has been an inflation in prices. Gingelly seeds have increased 15.3 per cent, Copra-Madras shows a very high increase of 43.1 per cent, while in the case of castor seed it has been 25.7 per cent.⁴¹

It is unfortunate that we do not have separate figures for the traffic in groundnuts in the reports of the Railway Board. There is only one class under Heavy merchandise and that is Oil seeds; so that it is difficult to study the trends in rail-borne trade from these general figures. Taking this class as a whole, we observe a noticeable increase both in earnings and in traffic in 1936-37, but in 1937-38 there was a fall. The figures for the four years 1934 to 1938 are:—⁴²

Year.	Traffic in tons.	Earnings in Rs.
1930-31	4,188,900	4,00,75,400
1934-35	3,357,500	2,98,47,900
1935-36	3,084,400	2,77,46,300
1936-37	3,842,100	3,31,48,200
1937-38	3,516,200	3,03,68,100
1938-39	4,082,400	3,60,31,300

41 Figures compiled from the Madras Commerce Report for the month of December 1939.

42 Figures from Railway Board Reports.

Freight Rates

In comparison with our basic year 1930-31, however, there has been considerable curtailment in traffic, the fall amounting to nearly 20 per cent of the 1930-31 figure in 1937-38. While the foregoing figures refer to the whole of India, some idea of the vast bulk of the rail-borne trade in this Presidency can be had from the table given below. The figures for Gingelly and Castor are included so as to show at a glance the relative bulk of the trade in groundnuts as compared with the other oil seeds. The figures are in tons and refer to 1938 and 1939.

RAIL-BORNE TRADE OF MADRAS PROVINCE (IN TONS). TRAFFIC IN 1938.

Month.	Castor seed.		Groundnuts.		Gingelly seed.	
	Import.	Export.	Import	Export.	Import.	Export.
January	546.3	22.8	10,067.6	6,418.4	2,142.8	24.8
February	1,127.7	37.6	4,266.0	4,236.3	3,061.0	3.4
March	732.1	..	7,251.4	6,280.3	2,093.1	20.7
April	1,031.6	14.4	3,058.0	2,207.4	618.7	9.9
May	383.6	1.8	2,638.9	2,659.2	971.5	6.5
June	368.5	46.4	4,472.8	2,610.7	559.3	22.9
July	202.9	10.9	6,322.1	2,918.6	462.6	6.8
August	223.6	14.4	3,336.1	1,476.4	888.4	4.5
September	286.4	29.1	1,889.6	1,919.1	1,161.3	5.5
October	335.4	..	3,442.2	1,887.6	3,930.3	5.5
November	163.2	1.0	9,665.0	538.7	2,803.6	1.1
December	460.1	Nil	1,229.2	11,265.9	4,494.2	35.4
	<hr/> 5,861.4	<hr/> 178.4	<hr/> 57,638.9	<hr/> 44,488.6	<hr/> 23,186.8	<hr/> 147.0

TRAFFIC IN 1939.

Month.	Castor seed.		Groundnuts.		Gingelly seed.	
	Import.	Export.	Import.	Export.	Import.	Export.
January	451.2	Nil	5,027.9	1,347.3	2,439.4	1.5
February	1,248.9	Nil	3,113.2	12,155.1	2,808.1	4.6
March	1,419.0	42.1	3,222.2	5,854.4	1,404.9	1.0
April	1,144.1	16.8	2,794.9	4,017.2	1,776.3	8.4
May	1,176.8	18.0	108.3	5,716.9	511.7	9.4
June	765.0	18.5	3,513.7	2,145.3	528.1	.8
July	399.4	8.6	2,114.0	2,809.7	609.1	9.9
August	416.1	.2	678.2	3,258.8	748.9	1.4
September	1,577.7	5,237.1	56.2	907.9	1,329.9	16.6

From these figures⁴³ it can be seen at a glance that for the year 1938, for which complete figures are available,

⁴³ Statistics compiled from the reports of the Southern India Commerce Monthly.

Road-Rail Transport

the imports of groundnut were nearly ten times those of castor and more than two and a half times those of gingelly. On the export side too we find that, in comparison with groundnuts, castor and gingelly fade out of the picture entirely. Castor exports form only 0.4 per cent of groundnuts exports and gingelly exports 0.34 per cent. The export figures for this oil seed show a sudden increase in the month of December; more than double those for November. That could be attributed to the fact that the harvesting of groundnuts takes place about October-November. The traffic earnings of the South Indian Railway under the head of oil seeds amounted to Rs. 24,32,900 for transshipment of 2,57,300 tons of the commodity. The traffic was heaviest on the metre gauge since the main oil seeds producing areas lie on this section. The total freight on the broad gauge amounted to 1,01,400 tons; on the metre gauge it was 2,46,300 and on the narrow gauge it was only 9,600 tons.

According to the general classification on Indian railways, groundnuts are placed in the fourth class at railway risk; the maximum and minimum for that class being 0.62 and 0.166 pie per maund per mile. But when it moves in wagon-loads of not less than 300 maunds on the broad gauge, and not less than 160 maunds on the metre and narrow gauges, it is classed 2A when at railway risk and class 2 at owner's risk. In these cases the maxima and minima are 0.46 and 0.42 and 0.100 pie per maund per mile respectively. On the South Indian Railway, however, even when groundnuts offer in bulk and under the conditions referred to above, the charge is only fourth class at railway risk. The only explanation that may be offered for this is that, since the areas tapped by the South Indian Railway are the largest producing areas in India, such an enhanced rate may be sustainable. It could be argued contrariwise, that for this very reason the rates should be lower so that,

not only the advantages of pride of place could be conserved but also, the economic prospects of that particular trade could be developed. Another disadvantage is that groundnuts are not accepted at owner's risk on this Railway. If this were allowed then, *ipso facto*, the rate would also be lower, thus conferring a boon on the producer-shipper. Lastly, the South Indian Railway does not quote schedule rates. It has already been pointed out that the adoption of the telescopic rates would confer a great benefit on traders, especially when the commodity shipped is agricultural. Of course, special station-to-station rates are quoted, but this should in no way prevent the trading public from having the benefits of schedule rates. In the case of stations that are not so preferentially treated by the declaration of station-to-station rates, the ordinary class rates would apply and even this, we have observed, are much higher than those in the General Classification. The small trader who offers his produce for transport from stations of secondary importance has thus to bear a very heavy rate.

Station-to-station rates are quoted profusely on this Railway. The district of South Arcot in this presidency is a very important producing centre, so that a number of rates are quoted from, and to, places in this district. The most important stations are Cuddalore, which is a port town, and Panruti which is of considerable commercial importance. The following are a few station-to-station rates in this district.

Conditions of carriage.	From	To	Rates per maund.	Remarks.
W/160 O.R., L.	Anamalai Road (via Dindigul)	Cuddalore Junction	0 10 3	
Do.	do.	Madras Beach	0 10 3	
Do.	Arni Road	Cuddalore	0 4 10	
Do.	do.	Madras Beach	0 5 0	
Do.	Panruti	Cuddalore	0 1 2	
Do.	Polur	Cuddalore	0 4 10	
	Pollachi	Cuddalore via Dindigul	0 10 0	Includes reduced terminal charge of 11 pies per maund free of short distance charge.

Road-Rail Transport

Conditions of carriage.	From	To	Rate per maund.	Remarks.
W/300 O.R., L.	Karur	Cuddalore	0 8 4	
W/160 O.R., L.	Ullundurpet	Cuddalore	0 2 0	
Do.	Vriddha-chalam	Cuddalore	0 1 6	Free of short distance charge.

It will be seen from the foregoing that all the rates are at owner's risk, though the class rate is only at railway risk. The minimum wagon specification is in all cases, with the exception of Karur to Cuddalore, 160 maunds and the requirement is that the loading and unloading is to be done by the public and not by the railways.

Let us now take up a few of these rates for detailed investigation. Arni to Cuddalore is a distance of 101 miles *via* Villupuram Junction along the shortest route. The special rate quoted for this is Re. 0-4-10, whereas at the class rate it would come to Re. 0-5-3. It might also be observed that whereas the rate to Cuddalore is Re. 0-4-10, that to Madras Beach which is 223 miles distant, *i.e.*, more than twice the distance in the former case, is only five annas. At the class rate the charge would come to Re. 0-11-6 per maund. This exemplifies the statement already made that it is railway practice to charge lower rates for traffic moving towards the ports. Pollachi on the Dindigul-Podanur section is an important station from the goods traffic point of view, so much so, a special rate is quoted from there to Cuddalore and Madras Beach. The rates to both these ports are the same, *viz.* 10 annas. The distance to Cuddalore is 256 miles and that to Madras Beach 347, by the Trichinopoly-Villupuram chord line, and 387 *via* the main line. The corresponding charges at class rates would be Re. 0-13-3 to Cuddalore and Rs. 1-1-11 to Madras Beach by the shorter route. It might here be noted that the rate from Pollachi to Pondicherry, which is more distant than Cuddalore, is the same; as also the rate to Negapatam,

Freight Rates

which is the least distant from Pollachi. The influence of the competition of ports for traffic is such that the same rate is quoted in all these cases. Otherwise that port would be chosen for export⁴⁴ for which the rate was least.

In addition to these station-to-station rates published in Part I-B of the Goods Tariff of the South Indian Railway, other rates are declared which come into force for short periods after which they are withdrawn. These might be quoted in special cases when traffic needs so dictate it. A few such rates are given below for purposes of comparison :—

Conditions.	From	To	Rate per maund.	Date of introduction.
W/160 O.R., L.	Oddan- chatram	Tata Oil Mills siding at Ernakulam	(a) 0 9 7	19—7—38
W/300 O.R., L.	Omatur	Cuddalore Jn.	0 7 6	20—12—37
W/160 O.R., L.	Asakalat- tur	Cuddalore Jn.	0 2 9	
Do.	Panruti	Cuddalore Jn.	0 1 2	(b1) 15—8—38
Do.	Usilampatti	Negapatam	0 10 0	30—8—38
	Pennadam	Cuddalore	0 2 5	
	Theni	Dindigul	0 2 6	
	Vellore Cantt.	Cuddalore	0 5 3	
	Vellore Cantt.	Pondicherry	0 5 3	
W/160	Krishnagiri	Cuddalore	0 7 4	The following rates were with- drawn as per local rate ad- vice No. 5 of 1938.
O.R., L.	Morappur Jn.	Beach	0 8 0	
	Periakandil	siding	0 6 11	

N.B.—(a) This rate will apply only on production of a certificate at the time of booking by the sender from the consignee that the groundnuts are not for export and are to be used only for crushing purposes in the mills at Ernakulam. This rate includes a siding charge of one pie per maund.

(b1) Includes a reduced terminal charge of 11 pies per maund free of short distance charge.

The concessions shown in these cases are not much; for example, the class rate for Vellore to Cuddalore, a distance of 116 miles, would come to just 6 annas whereas the new station-to-station rate is cheaper by nine pies only. The chief reason is to bring certain stations within the ambit

⁴⁴ All these figures are compiled from Part I-B of the S.I.R. Goods Tariff.

Road-Rail Transport

of such treatment so as to meet the exigencies of particular situations or to help the movement of traffic in bulk from and to places which, otherwise, would not take place.

Groundnut oil is classified in the C division under "Oil" together with Gingelly oil (N.O.C.) and Castor oil (N.O.C.).⁴⁵ The rate at railway risk is according to Class 2A *i.e.*, the maximum for which is 0.46 pie, and at owners risk is 0.42 pie per maund per mile. The specification as regards packing is that it must be packed in metallic cases contained in strong wooden cases securely fastened with screws or nails. If not so packed, it will not be accepted for carriage by rail. A declaration that the packing is in accordance with this condition must be entered on the consignment note. Station-to-station rates are also quoted for groundnut oil. Two examples of this are the rates of Re. 0-8-9 for shipments from Pollachi to Madras Beach and Re. 0-8-9 from Virudhunagar to the same destination. The specifications are that a wagon load consignment must be not less than 160 maunds in weight and that the traffic is at owner's risk, the condition being that the loading and unloading should be done by the parties concerned at either end.

While the foregoing refer to local booking only, station-to-station rates are quoted in the case of through traffic also. There are three such items in Part I-B of the South Indian Railway Goods Tariff. They are the following:—

Item No.	From	Stations. To	Rate per maund.
W/300 O.R., L.	Dasampatti	Madras <i>via</i> Jalarpet	Rs. A. P. 0 6 11
W/160 O.R., L.	Dharmapuri	} Madras <i>via</i> Jalarpet	0 8 8
	Krishnagiri		0 7 0
	Periakandilli		0 6 7
W/300 O.R., L.	Samalpatti		0 6 11
	Tirupattur	do.	0 6 0

(N.B.—The figure following the letter W shows the minimum wagon load in maunds).

45 N.O.C. stands for "Not otherwise classified".

Freight Rates

Similarly, in the case of groundnut oil, special station-to-station rates are quoted for through traffic from Erode Junction to Shalimar. The minimum wagon load is fixed at 300 maunds for this, and it must observe Rule P|14 which states that it “must be packed in tins, sound wooden barrels or sound iron drums.” The rate per maund is Rs. 1-6-0, of which the South Indian Railway’s share is one anna and eleven pies, that of the M. and S. M. Railway is 10 annas and 8 pies; and the B. N. Railway gets 9 annas and 5 pies.

We may now turn to prices. These vary according to the quality of the nut and, generally, prices for the same quality are fairly steady. The present unstable situation due to war has, however, accounted for some rise in prices. In the table below the prices of three important varieties are shown against various dates which relate to periods prior to and after the outbreak of the present war:—

PRICE PER IMPERIAL MAUND OF GROUNDNUT IN RUPEES. ⁴⁶						
Station.	28-2-39.	1-5-39.	6-6-39.	4-7-39.	30-1-40.	20-2-40.
Vizagapatam	3.99	3.96	4.76	4.77	4.82	4.76
Guntur	3.92	3.89	4.88	4.59	4.65	4.65
Cuddalore	4.20	4.20	4.97	5.14	5.14	4.97

The incidence of these rates may be looked into. The prices reigning in December 1939, after the rise in price consequent on the outbreak of war, were between Rs. 28 and Rs. 28-2-0 for a candy of 530 pounds. The railway maund is equivalent to 82.29 lbs. and, taking this as the basis of calculation, we find that the price for one maund is Rs. 4-8-0 nearly. It has already been stated that there was a 14.5 per cent increase in price over that prevalent on 28th August, *i.e.*, before the war.* Deducting this

* *N.B.*—The price increase is in comparison with the ruling prices prior to the outbreak of the present war. This does not deny the fact that for the past few years, ground-nut prices have been falling.

46 *Vide* Fort St. George Gazette; various dates.

Road-Rail Transport

increase, the pre-war price would come to Rs. 3-12-0. Let us now take the rate from Pollachi to anyone of the following places:—Madras Beach, Negapatam or Pondicherry for all of which the same rate of 10 annas per maund is prevalent. Comparing the freight rate with the price per maund, it is obvious that the former forms, in round numbers, 14 per cent of the latter at current prices and 16 per cent at the pre-war level. These rates refer purely to local bookings; needless to say, they would be higher when through traffic has to be considered. The freight from Dharmapuri to Madras is Re. 0-8-8 and taking the highest price quotation for February 1940, we will find that the incidence would come to about 11 per cent only. But, if the freight were to be calculated at class rates, the incidence would be much higher. For example, the station-to-station rate from Pollachi to Madras Beach is 10 annas; at the class rate it would come to Rs. 1-1-11. Taking the highest February price, we see that, calculating on the basis of class rates, the incidence would work out at the high percentage of $27\frac{1}{2}$ %. Such a comparison is, however, not always correct, for it is fallacious to take the class rate when a station-to-station rate is available. Nevertheless, it must be remembered that the station-to-station rate is allowed only under certain conditions; in the case we have considered, the specification is that the rate will be applicable to only minimum wagon load consignments of 160 maunds. Smaller consignments, therefore, will have to move at class rates in which case the incidence would be $27\frac{1}{2}$ %. If we were to include the present surcharge of $12\frac{1}{2}$ % on all goods traffic, the incidence would, *a fortiori*, be greater. It is wrong to charge staple commodities which yield the largest returns more than what they can bear, and it is an injustice to increase the rates even before they could benefit from the higher prices. The Railway Member in his budget speech for 1939-40 commends this policy on purely pragmatic grounds. Public opinion is

against such a general rise in rate and if public opinion is not enough, we have the high authority of the Acworth Committee which criticised the sur-taxes levied during the last war. The main reason assigned for this rate increase is that the railways have to work under pressure to meet the demands of increased traffic. Why it is not possible for them to do so at old rates passes comprehension. Hitherto, the railways were loud in their lamentations at falling incomes and deficit economies due to the depression. Now, when traffic increases, instead of applauding it and taking it, they decree a rate increase. On the contrary, they should try to get all the traffic that they can. Increasing rates contrary to all sound canons of transport economies can mean only one thing, *viz.*, that the railways wish to thrive on this sudden accession of business and to deprive trade and industry of their just share. The incidence of railway rates is already high; the surcharge would make it higher still.

Note.—Under the Madras General Sales Tax Act of 1939, Groundnut oil has been subject to double taxation. As such the industry is not paying and many instances are known where oil presses were sold as scrap. *Vide* "The Madras General Sales Tax Act—A Study" by Dr. B. V. Narayanaswamy & S. Thiruvengadathan.

RICE

RICE is the most important food grain in India. It is a crop that is peculiarly suited to monsoonish lands which have a plentiful rainfall. A clayey soil is essential for its growth and to do well it requires at least 80 inches of rain. During the ripening period it needs a strong heat. The climatic conditions of this vast sub-continent satisfy these conditions so that one is almost tempted to call India one of the largest granaries in the world. The rich Ganges and Cauvery deltas are the great rice producing tracts of India. Where nature is not so bounteous in her gifts

Road-Rail Transport

irrigation is resorted to. Some idea of the importance of the cereal can be had from the following figures of area under rice in India for the ten years ending 1935-36.

Year.	Acres.	Year.	Acres.
1926-27	78,501,389	1931-32	81,287,906
1927-28	76,606,868	1932-33	79,968,340
1928-29	81,131,743	1933-34	80,424,560
1929-30	79,424,203	1934-35	79,520,027
1930-31	80,631,668	1935-36	79,888,371

These figures show that the average acreage under this crop must be round about 80 million acres. The acreage was at a maximum during 1931-32, and in the next year there was a sharp fall to 79,968,340 at which figure it has approximately remained till 1935-36 with the exception of 1933-34 when there was a perceptible increase in acreage. The period of declining acreage synchronised with the aftermath of the depression and increasing imports of rice from Burma and Indo-China.

The position of Madras with respect to this cereal can be seen from the figures for the years 1934-35 and 1935-36. In the first year the acreage was 11,055,587 and in 1935-36 it came down to 9,796,280 acres. The yield for the corresponding years was 4,981,000 and 4,741,000 tons respectively. In 1937-38 the area under paddy increased to 10,140,831 acres which was less than normal. The area in a year of normal season in this Presidency has been computed at 10,200,160 acres. Thus, the percentage of the area under this crop to the total area under all crops in 1937-38 was 27.5. The index number of acreage of the various crops would be helpful in studying the growth in acreage of the various crops.

Freight Rates

Year.	Cereals & Pulses.	Cotton.	Ground nut.	Sugar- cane.	Tobacco.
1928-29	100	100	100	100	100
1929-30	103.52	100.48	87.23	110.14	100.58
1930-31	103.29	82.82	97.08	128.97	95.07
1931-32	102.38	89.44	71.63	130.35	105.32
1932-33	102.62	79.10	95.58	135.75	100.35
1933-34	100.30	87.47	102.72	136.57	97.10
1934-35	99.64	93.48	63.90	140.68	114.52
1935-36	99.47	108.09	68.49	135.91	109.47
1936-37	92.70	100.90	94.99	134.33	99.19
1937-38	89.75	103.19	126.59	109.98	115.28

The table takes 1928-29, the pre-depression year, as the base and relates the acreage for the various years on this. The area under cereals and pulses register an increase during the years 1929-34, the maximum being reached in 1929-30 when the index number is 103.52. Subsequent to 1934, there has been a steady shrinkage, and the worst affected year has been 1937-38. The area under cotton shows a similar decrease during the period 1930-35, after which there is improvement, 1935-36 being a record year for this crop. Probably the one crop that was most badly hit by the depression is groundnut; the index number for that commodity fell to the very low figure of 63.9 in 1934-35. Tobacco acreage has shown comparatively little or no decrease, there being an increase in 1934-35 and 1937-38. It would be seen that the first increase coincides with a shrinkage in territory of cereals, cotton and groundnut and with a phenomenal rise in the acreage under sugarcane. Sugarcane acreage figures make interesting reading; since, despite the curbing effects of the depression, there has been a very great increase, and it is only in 1937-38 that there has been a steep fall from 134.33 in the previous year to 109.98.

The average of the areas under paddy for the past quinquennium ending 1937-38 in this Presidency has been 13.4 per cent of the total area under paddy in India. In point of importance, Bengal comes first with Burma second

Road-Rail Transport

and Madras third, so that with the separation of Burma, Madras is the second largest rice producing province in India. In 1934-35 the acreage for Bengal and Burma was 20,739,700 and 12,687,717 respectively. For 1935-36 the corresponding figures are 21,091,900 and 12,502,455. The area sown with paddy in the Province of Madras up to the 25th November, 1939 is estimated at 8,486,000. On the same date in the previous year the figure was 8,980,000 thus showing a decrease of 5.5 per cent in the acreage. This shrinkage is entirely attributable to the vagaries of the weather and the absence of much needed rains; add to this the very heavy floods in East Godavari, West Godavari, Kistna and Tanjore have seriously affected the produce of the Presidency. The damage caused has been so great that in all districts of the Presidency with the exception of Guntur, Kurnool, Bellary, Salem, Tanjore and the Nilgiris, there has been a considerable decrease in the acreage. The subjoined table affords a comparative study of acreage for 1939 and 1938 in thousands of acres. The seasonal factor in the last column represents the percentage of the estimated yield per acre in the current year to the average yield per acre in a year of average season. This seasonal factor amounted to 90 per cent in 1938. In the first table the figures are according to group and in the second they relate to some important paddy raising districts of the Presidency.⁴⁷

(a)

Group.	Estimate of area sown with paddy up to the end of		Increase or decrease of area (plus or minus).	Seasonal factor.
	Nov. 1939. Acs.	Nov. 1938. Acs.		
Circars ..	2,790	2,895	—105	92
Deccan ..	233	280	— 47	100
Carnatic ..	1,207	1,400	—193	100

⁴⁷ Figures compiled from report of the Madras Chamber of Commerce.

Freight Rates

Group.	Estimate of area sown with paddy up to the end of		Increase or decrease of area (plus or minus).	Seasonal factor.
	Nov. 1939. Acs.	Nov. 1938. Acs.		
Central ..	1,020	1,129	—109	100
South ..	1,820	1,786	34	97
Total West				
Coast & Hills.	1,416	1,490	— 74	100
Total Provinces.	8,486	8,980	—494	97
(b) District.				
Vizagapatam ..	640	690	— 50	95
East Godavari.	575	600	— 25	90
West Godavari.	625	645	— 20	90
Kistna ..	550	560	— 10	90
Guntur ..	400	400	Nil	95
Nellore ..	302	345	— 43	100
Chingleput ..	515	575	— 60	100
Tanjore ..	1,230	1,130	+100	95
Malabar ..	845	916	— 71	100
South Kanara..	565	568	— 3	100
South Arcot ..	390	480	— 90	100

The figures are self-revealing and need no explanation. The general conclusion derivable is that there has been a considerable decrease in the area under this crop—a decrease of nearly 5.5 per cent.

There is a very large and valuable trade in this grain as India exports large quantities of this cereal to foreign countries. The appended table shows the volume and value of these for the eleven years ending 1936-38.

EXPORTS OF RICE (PRIVATE MERCHANDISE)— (ALL KINDS) (IN THOUSANDS OF TONS AND RUPEES)

Year.	Tons.	Value.	Year.	Tons.	Value.
1926-27	2,035	32,95,92	1932-33	1,828	14,18,38
1927-28	2,152	33,64,25	1933-34	1,733	10,52,14
1928-29	1,765	25,99,00	1934-35	1,593	10,30,28
1929-30	2,298	31,28,42	1935-36	1,394	10,94,74
1930-31	2,254	25,81,89	1936-37	1,457	..
1931-32	2,301	17,84,39	1937-38	2,273	..
		1938-39	2,816		

Road-Rail Transport

EXPORTS OF PADDY IN TONS

1926-27	22,761	1932-33	58,844
1927-28	34,393	1933-34	11,384
1928-29	51,470	1934-35	14,357
1929-30	27,612	1935-36	16,552
1930-31	25,445	1936-37	8,191
1931-32	70,291	1937-38	831
	1938-39	2,689	

The exports are more of rice than of paddy and the exports of the latter bear no comparison to that of rice. It will be seen from the above statistical table that exports have fallen both in volume and in value. The peak year for exports was 1931-32 when they reached the highest figure of 23,01,000 tons, and thereafter there has been a continuous and steep falling off in our exports. In 1935-36 our exports of rice fell to the lowest level, namely, 13 lakhs and 94 thousand tons. In the next year there was an improvement, and the quantity exported amounted to 1,457,030 tons. But in 1937-38 there was a sudden and catastrophic fall in exports and they reached the very low figure of 227,269 tons, which is the lowest on record for the period under survey. It must also be observed that though in 1931-32 the volume was greatest, there was not a commensurate increase in value. In 1930-31 the value was round about Rs. 25 crores and 82 lakhs. In the next year, despite an increase of 47,000 tons in volume, value fell to Rs. 17 crores and 84 lakhs. That must be attributed to the world slump in prices which affected our rice trade also. The figures for imports of rice may serve as a valuable complement to the tables for exports.

IMPORTS OF RICE.

(VALUE ONLY IN THOUSANDS OF RUPEES).

Year.	Tons.	Value.	Year.	Tons.	Value.
1926-27	289	66	1931-32	17,931	16,20
1927-28	68,954	9,215	1932-33	35,510	31,10
1928-29	125,426	1,79,33	1933-34	84,024	48,99
1929-30	5,635	805	1934-35	282,918	1,88,01
1930-31	7,445	798	1935-36	90,293	67,11

It will be noticeable from this tabular statement that there are wide fluctuations in the imports of rice. The year 1934-35 marks the height of rice imports, and incidentally it may be remarked that that period synchronizes with that of falling exports—the exports for that year being the lowest *viz.*, 15,93,000 tons. This was due in the main to the large imports of cheap rice from Indo-China and Siam. Consequently, the prices also went down since in the presence of a competing foreign commodity the price of the indigenous national product has got to adjust itself to that of its competitor, for otherwise increasing resort would be had to imports. On balance, therefore, India is a larger exporter, and the swamping of our market with cheap Indo-Chinese and Siamese rice was partly checked by the imposition of a duty of 12 annas per maund on foreign rice in April 1935. The Province of Madras, however, is more an importer than an exporter of rice, and in recent years her imports of Burmese rice have increased on a vast scale. Madras imported 219,000 tons of rice in 1918 all of which was from Burma as against 121,000 tons of exports. Imports in the next year almost doubled and went up to 409,000 and exports shrank to nearly 8 per cent of the previous year's figure. Till 1926 all our imports by sea were from Burma, and in 1926 our imports amounted to 176,000 tons. On the other hand, Madras exports after 1919 began to look up, and they reached the figure of 153,000 tons in 1926. Imports of Burmese rice were, for the pre-depression period, at a maximum in 1928 when 276,000 tons were imported out of a total volume of 417,000 tons of imports. Exports for that year amounted to 147,000 tons. Thereafter, till 1934, there were no imports from Burma and though our exports declined to 66,000 in 1932 our imports were only 298,000 tons. The year 1934 marks a sudden increase in imports. Madras, which in 1933 imported only 403,000, took 10,77,000 in 1934 and 10 lakhs and 43 thousands in 1935. Out of

Road-Rail Transport

these Burma sent 742 and 897 thousands for the two years 1934 and 1935. Exports also slightly improved to 71,000 in 1935.* The chief reason for this is the competitive advantages that Burma possesses over Madras in the matter of rice production. Geographically it is situated in a highly fertile region with the benefit of heavy rains so beneficial to paddy. As a result, the cost of cultivation is much cheaper than what it is here. It is estimated that the cost of cultivating an acre of paddy in this Presidency is Rs. 24 while it is only Rs. 17 in Burma. This apart, water transport is much cheaper than railway shipment because of the inherent economy of this means of conveyance.

Foreign trade apart, there is considerable inland trade carried on by rail and river. On the import side, Bihar and Orissa, the United Provinces, Bombay and Madras are the most important. In 1935-36 these accounted for (in thousands of maunds) 4,923, 4,099, 4,380 (including Bombay port) and 11,248 (including Madras ports). It will thus be seen that out of the total imports of 32,723 thousands of maunds, the share of Madras alone was 11,248. With regard to exports Calcutta came first in 1934-35 and was able to export 13,199 thousand maunds to the various provinces. But in 1935-36 its share fell to 4,204,000 maunds. Madras ports which in the earlier year exported 8,502,000 maunds could send 8,270,000, in the next year. Thus, out of a total export trade of 37,723 thousands of maunds, the share of Madras was more than a fifth. These figures refer to both the river and rail-borne traffic in rice dehusked. As between these two, rail transport is the more important, and the following figures for the traffic in paddy and rice compiled from the reports of the Railway Board are interesting.

* All these figures are in tons.

Freight Rates

TRAFFIC IN RICE AND PADDY ON ALL CLASS I RAILWAYS (IN HUNDREDS).

Year.	Paddy.		Rice.	
	Tons.	Earnings. Rs.	Tons.	Earnings. Rs.
1927-28	1,618,1	86,11,3	3,954,6	3,25,21,7
1928-29	1,672,2	86,84,5	4,560,8	3,31,23,4
1929-30	1,715,8	86,52,6	3,995,7	3,30,24,5
1930-31	1,317,7	..	..	..
1931-32	1,317,7	61,55,7	3,994,6	3,08,95,2
1932-33	1,019,7	48,14,0	3,707,1	2,97,18,8
1933-34	1,131,5	48,54,8	4,379,8	3,40,53,3
1934-35	1,217,7	56,32,0	4,860,9	3,62,30,8
1935-36	1,295,2	62,36,1	4,074,1	3,15,52,2
1936-37	1,179,9	54,87,6	4,471,9	3,50,18,6
1937-38	8,486	39,30,7	3,584,9	2,90,85,5
1938-39	9,621	42,84,2	3,887,5	2,96,24,4

The earnings and volume of traffic under both heads increase till 1928 and thereafter they steadily fall, though in 1929-1930 there was an increased volume under paddy. In 1932, the year worst affected by the crisis, volume and earnings for both kinds of traffic are very low. The figures again improve in the two subsequent years. In 1935-36, though the figures for paddy are better, those for rice are less than in the previous year. The next year is a better one for rice traffic inspite of paddy figures showing a diminishing tendency. In the last year under review there has been an all round increase over 1937-38 which was the worst year under survey.

The Madras Presidency, it has been said, ranks second in importance among the paddy producing provinces of India. As such, the South Indian Railway which taps the rich and fertile regions of the Cauvery delta handles a rich traffic in this. As between rice and paddy the traffic is larger and heavier in the former. We might here give the traffic figures for the seven years ending 1937-38 with those for 1928-29 to serve as a base.

Road-Rail Transport

(a) TRAFFIC IN RICE IN THE HUSK *

(IN HUNDREDS).

Year.	B. G. Tons.	M. G. Tons.	N. G. Tons.	Earnings. Rs.
1928-29	5,92	16,79	11	12,800
1933-34	8,63	15,62	13	12,291
1934-35	12,82	20,20	8	16,493
1935-36	14,62	20,22	5	19,022
1936-37	13,29	17,89	3	17,342
1937-38	13,32	19,21	3	17,416
1938-39	14,03	18,04	3	17,114

(b) TRAFFIC IN RICE (IN HUNDREDS).

1928-29	16,24	24,50	84	28,962
1933-34	10,32	21,44	15	17,641
1934-35	14,55	25,99	66	23,376
1935-36	13,08	26,97	45	23,134
1936-37	11,42	21,11	11	19,154
1937-38	8,17	20,13	9	16,368
1938-39	10,91	22,21	6	19,599

In (a) the traffic and earning figures for 1933-34 are less than those for our base year; the same is true of (b). Thereafter, 1934-35 and 1935-36 show an increase in volume of traffic and in earnings therefrom. The next two years show a decrease for traffic in both rice and paddy. It will also be seen that the bulk of the traffic under both heads is carried on the Metre Gauge, as the chief rice producing areas are served by the metre gauge section of this railway. As far as the traffic of this province is concerned, the export figures are greater than imports for rice, and in the case of paddy the imports are larger. In 1938-39 the total volume of imports of paddy were 38,961.1 tons as against exports of 4,282.0 tons. The chief sources of imports of paddy are Orissa and the Central Provinces, while the chief destination is Bombay. As for rice, the

N.B.—S.I.R. earnings given only on B.G.

* B.G.: Broad Gauge; M.G.: Metre Gauge and N.G.: Narrow Gauge.

Freight Rates

volume of imports during the same year amounted to 113,764.6, and exports reached the figure of 156,866.6 tons. The most important exporting centres i.e. places from which rice was imported into Madras were Orissa, Central Provinces, Bengal, Bihar and the Punjab, and the chief importing centres were Mysore, the Nizam's Dominions and Bombay. Judging from the monthly figures for traffic available for 1938-39 there seems to be no very great seasonal pressure of traffic. Nevertheless, the June and November export figures for rice are much higher; in 1938 the volume of these was 16,288.9 and 16,019.8 respectively. There is, however, a marked periodicity in the import traffic, and the months of heavy traffic for rice imports are December to April. The table below gives a statistical abstract of this for the year 1938.

Month.	Paddy.		Rice.	
	Import.	Export.	Import.	Export.
January	1,915.6	136.5	10,613.4	13,976.7
February	4,932.9	130.1	12,981.1	11,603.7
March	6,698.4	112.6	10,789.9	12,944.1
April	3,784.1	132.6	10,895.5	10,010.7
May	5,691.8	100.0	8,005.2	13,095.5
June	3,931.7	28.1	6,691.9	16,288.9
July	1,802.8	91.4	5,966.7	13,309.9
August	891.8	1,992.6	6,781.2	11,222.4
September	1,551.7	524.9	6,552.2	13,636.7
October	2,006.1	669.1	7,742.2	14,421.9
November	1,314.4	114.3	6,760.9	16,019.8
December	4,438.8	249.8	20,047.4	10,336.3
Total	38,961.1	4,282.0	1,13,764.6	1,56,866.6

Let us now turn to the price of rice. Even the most casual observer would note that, as compared to the reigning prices in the early twenties of this century, there has been a very steep fall in rice values. This fall in prices is due to the two causes already referred to: the

Road-Rail Transport

depression and cheap imports. The first cause has affected all industry and agriculture equally. With the curtailment in purchasing power and the consequent falling off in demand, agricultural commodity prices had necessarily to adjust themselves to the general prices. Though incomes were falling, there was a fair stickiness in expenditure so that the agriculturists' expenses did not fall proportionately. The rigidity of the land revenue, despite some remissions and concessions, has hit the impecunious agriculturist very hard. As a result, the amount realised is hardly commensurate with the labour involved, and there are many instances especially in the district of South Arcot where lands have had to lie untilled since it does not pay to cultivate them. All these together have combined to swell the agricultural indebtedness and instances are not rare where borrowing has been resorted to for payment of land revenue. In a survey conducted by the Economics Department of the Annamalai University, of some typical villages in the South Arcot District, it was found that indebtedness under this head amounted to nearly 13·3 per cent of total debts.* This together with the unhealthy fragmentation of holdings and the lack of cheap credit facilities has made agriculture an uneconomic industry wherefrom the return is too low. Thus prices are further lowered.

As regards cheap imports, we have already referred to the comparative advantages of foreign rice. The effect of these imports is to force the prices of Indian rice to the level of its competitors. To the individual consumer it is a matter of indifference which rice it is that he purchases; he would naturally buy that which is the cheaper, and since Indo-Siamese and Burmese rice could compete on more advantageous terms, the demand for our

* *Vide* The Madras Agriculturists' Relief Act: A study by Dr. B. V. Narayanaswamy Naidu and Mr. P. Vaidyanathan, p. 4.

rice received a rude setback, and Indian rice had to accept the low prices dictated by competition. It was the chronic nature of this evil that led the Government to levy a duty of twelve annas per maund on imports. This duty, however, did not refer to paddy, and as such the Government's action was not effective in checking imports and stopping the price fall. All varieties of rice shared this misfortune and the subjoined table shows the index numbers of prices of rice with 1922 as base for the Madras Presidency.

INDEX NUMBERS OF PRICES.

Year.	Burma.	Godavari.	Kistna.	Guntur.	Nellore.	Tanjore.	Chingleput.	Madras.
1922	100	100	100	100	100	100	100	100
1923	101	111	104	102	109	82	115	101
1924	106	111	123	105	120	114	128	115
1925	107	110	105	105	120	122	102	105
1926	104	121	123	111	126	90	121	108
1927	94	120	114	107	130	105	132	109
1928	90	110	101	92	130	98	98	101
1929	88	113	94	90	115	87	90	91
1930	55	67	70	60	57	75	62	69
1931	51	65	71	55	66	55	60	62
1932	41	52	61	55	72	46	55	55
1933	34	42	44	38	58	39	53	46
1934	45	64	60	33	82	52	60	57

It will be seen from the foregoing that till 1927 there was a steady rise in prices, and the index numbers for Nellore and Chingleput rice rose to the very high figures of 130 and 132. Thereafter, prices take a downward turn. Nevertheless, for 1928 and 1929 the index numbers for Godavari and Nellore rice are higher than those for the base year. With 1930 there is a sudden fall; the index number for Nellore rice fell by more than half and for Godavari rice fell from 113 to 67. The worst year has been 1933

Road-Rail Transport

when the index number for Burma itself came down to 34. It is interesting to note here that as compared to Burma the index numbers for Madras districts did not fall so low in 1933. The least was for Guntur which was higher than the Burma figure by 4. In 1935 there was a slight upward trend. Calcutta Nagara No. 1, which in January 1934 was selling at Rs. 3-14-0 per maund, improved by ten annas.

The present prices for representative varieties in the Madras markets as on the 11th December, 1939, were, for an imperial maund, Rs. 3-3-0 in Chittoor, Rs. 2-10-0 in Vizianagaram, Rs. 2-9-0 in Hindupur and Cocanada, Rs. 3 in Vellore and Madura, Rs. 2-8-0 in Kumbakonam and Rs. 2-5-0 in Cuddalore. The lowest was Rs. 2-3-0 in Conjeevaram. As compared with the prices prevalent in the previous month, there has been an all round increase, the maximum being 17 per cent in Hindupur. For Tinnevely rice the increase is 10%, and for Chittoor and Anantapur it is 16 and 13 per cent respectively. Cuddalore rice rose in price by only 8 per cent.

The table below gives the price variations at four stations for four months prior to the present war and two months subsequent to it.⁴⁸

	1939.				1940.	
	Feb. 28.	May 1.	June 6.	Aug. 6.	Jan. 30.	Feb. 20.
Vizagapatam	2.73	2.63	2.63	2.63	2.69	3.01
Cuddalore	2.47	2.47	2.63	..	2.47	2.47
Kumbakonam	2.30	2.47	2.47	2.47	2.22	2.30
Negapatam	2.25	2.33	2.49	2.41	2.25	2.33

Rice as well as Paddy is placed in the first class in the General goods classification for which the maximum rate is .38 pie per maund per mile. This is the cheapest class rate quoted for the staple agricultural commodities which are so essential to our economic well being. An important

48 Fort St. George Gazette.

Freight Rates

part of this traffic over the South Indian Railway moves at schedule rates. The particular schedule rate adopted here is $\frac{C/A}{C/K}$ for a minimum distance of 51 miles. The differential rule is applicable which specifies that except where otherwise mentioned, when goods of the same description and booked in the same direction are charged at different rates, the rate for the smaller consignment should not exceed that for the bulkier one. This rule applied to distance would mean that given similarity of conditions, the charge for the shorter distance should in no case exceed that for the greater distance. The other specification for the grant of this schedule rate is that on the broad gauge the minimum consignment should be one of 400 maunds and on the metre gauge 270. In addition to the schedule and class rates, numerous station-to-station rates are quoted to facilitate movement of traffic. The following are a few of the rates declared for local booking.

Conditions.	From	To	Rate per maund.		
Paddy.			RS.	A.	P.
C/20 O.R., L.	Budalur	Trichy Goods	0	1	0
C/270 O.R., L.	Chingleput	Madras Beach	0	1	3
C/400 O.R., L.	Ernakulam	Shoranur	0	2	6
C/270 O.R., L.	Cuddalore	Salem Market	0	4	6
C/20 O.R., L.	Karunguzhi	Madras Beach	0	1	9
C/20 O.R., L.	Kille	Cuddalore	0	1	0
C/20 O.R., L.	Cuddalore	Vriddhachalam	0	1	5
C/20 O.R., L.	Cuddalore Jn.	do.	0	1	5
"	Peralam	Negapatam	0	1	3
"	Portonovo	Pondicherry	0	2	0
" O.R.	Palghat	Coimbatore	0	1	6
C/270 O.R., L.	Madurantakam	Egmore	0	1	9
O.R., L.	Kollengode	Coimbatore	0	2	3
C/20 O.R., L.	Chidambaram	Pondicherry	0	2	3

It should be noticed here that most of these are examples of short distance traffic. Madurantakam to Egmore is only a distance of 51 miles and the rate is only an anna and three quarters for a maund. Cuddalore to Vriddhachalam is only 35 miles but the rate is only 4 pies

Road-Rail Transport

less than the former. From Kille, Cuddalore is only 20 miles away so that a rate of an anna is declared free of short distance traffic. The longest distance in our list is that from Cuddalore to Salem—a distance of 119 miles for which the rate is $4\frac{1}{2}$ annas. It is thus seen that the concessions in rate vary. What is more important is the variance in the minimum weight for the consignments. For Palghat to Coimbatore, no minimum weight is necessary so that a single maund could move at the rate of $1\frac{1}{2}$ annas. In very many cases the minimum per consignment is fixed at 20 maunds: a very reasonable minimum indeed! There are cases where the minimum is as high as 400 maunds *e.g.*, Ernakulam to Shoranur. Taking the average price as Rs. 3-8-0 for the period prior to the present war, we observe that the freight charge for these short distances form a small proportion of the prices. In the examples cited above, the freight from Cuddalore to Salem which is $4\frac{1}{2}$ annas would form less than 9 per cent. If, however, long distance through-traffic were to be considered the incidence would necessarily be much higher. A number of rates are quoted to Cuddalore from stations on the G. I. P. railway. For example the freight from Muttra to Cuddalore is Re. 0-15-10, but via New Delhi, which is a greater distance, the rate is only fourteen annas. This is to encourage point to point traffic. Gwalior is nearer to Cuddalore than Muttra by 105 miles; nevertheless, the rate is higher *viz.* Rs. 1-0-11. Of this, the share of the G. I. P. Railway is 7 annas 7 pies, that of the Nizam State Railway 3 annas 7 pies, the M. & S. M. Railway's share is four annas, while the S. I. Railway gets an anna and 11 pies. Again, the freight from Cocanada Port to Salem Market is 13 annas and 6 pies, but for Tuticorin which is a longer distance it is eight and a half annas: an instance of port to port traffic. If a comparison of these rates were made with the average price of rice, which we have taken at Rs. 3-8-0, we will be able

to appreciate the regressiveness of these rates. The Gwalior to Cuddalore rate would be 30·5 per cent of the price. Allowing for an increase in the latter to even Rs. 5 per maund, the incidence would still be 20 per cent. As for consignments from Cocanada to Tuticorin, the percentage would be nearly 22. In comparing the incidence between long and short distance, we must bear in mind that short distance transportation costs must, of necessity, form a small percentage of total costs. What should be compared is the freight charge as between distances travelled. Viewed that way, it will be seen that short distance rates on local booking on the South Indian Railway are more regressive in character. Let us take an example to clarify this. Gwalior to Cuddalore is a distance of 1,400 miles, and Chidambaram to Cuddalore is only 24 miles. The corresponding rates are Rs. 1-0-11 and 1 anna respectively. At the former rate the charge for Cuddalore to Chidambaram should be 3·5 pies only or contrariwise, at the later rate the freight from Gwalior to Cuddalore should be Rs. 3-10-0. But the actual charge is much less, *i.e.*, the short distance rate is more regressive than the long distance rate. It is nearly 340 per cent of this. Cuddalore to Chidambaram is too short a distance for comparison, so another example may be taken: Cuddalore to Salem Market, a distance of 119 miles for which the freight is four and a half annas. At this rate the charge from Gwalior to Cuddalore must be Rs. 3-5-0, which is 320 per cent of the actual rate. Thus, however one might view it, the short distance charge is exceedingly regressive. When the special short distance charge which sometimes is levied is included, the regressiveness is increased further.

Needless to say, commodity grain movements do not take place between primary markets, but between the producing centres and the main distributing centres. In India, these are invariably long distances apart, so that there is great

Road-Rail Transport

need for the lowering of rate charges on long distance traffic, especially since it constitutes our principal food grain. There is, however, an invidious distinction made between port to port traffic, the existence of which was acknowledged by the Acworth Committee. Traffic from Chidambaram to the port of Madras is facilitated by the special rate of 4 annas per maund, the distance between the two being 154 miles. The rate from Chidambaram to Cuddalore which is 28 miles away, is one anna; at this rate the freight charge for the former should be higher namely $5\frac{1}{2}$ annas, so that a concession of nearly 30 per cent is shown. Again, the rate from Cuddalore to the port of Cocanada is only $8\frac{1}{2}$ annas. What is more interesting is that the same rate is quoted between Negapatam, a port town, and Cocanada for which the distance travelled is greater by 112 miles. The quotation of such rates is nothing special to India. All over the world it is customary to quote such easy rates since export trade has to be developed. For this there should be the greatest co-operation between the railways and the docks, and it was with this end in view that Parliament allowed the railways to acquire the docks in England so as to ensure co-ordination between the two services. With regard to rice exports in the Madras Presidency, the conditions are peculiar. We are large importers of rice because the quantity locally raised is insufficient to meet our needs. Our chief exporter has, therefore, been Burma. The importance of this food grain in our diet can hardly be over-emphasised. In spite of the curbing effects of the depression, there was not much shrinkage in the area under cereals and pulses. The index number for 1937-38 was only 89.75. It must be remembered that this figure refers to all cereals; the figures for rice must be much higher. Therefore, to meet our domestic needs, we have to import Burmese rice, imports of which into this Presidency have been increasing. In certain circles suggestions have been time and again made

that foreign imports should be checked by laying an embargo on them. Such a measure, though sound on protectionist principles, would have a positively regressive effect on the consumer, since this embargo would inoculate him against the benefits of cheap food. When imports are restricted, local supply being small, prices will rise and the consumer will have to suffer. The only way to attack the problem would be to improve the yield per acre under paddy. It is common knowledge that the return per acre of paddy is only Rs. 25 as against Rs. 250 for tobacco.

All this is intended to show that the movement of railway freight traffic is from the ports to the main inland markets. What could, therefore, be suggested is that, instead of an embargo which would shut imports out, the inbound railway freight rates may be enhanced so that a higher charge may be made in the case of imports, and thus some alleviation of their competitive effects could be wrought. Moreover, the extra receipts gained this way could be utilised to subsidize low rates on outbound traffic to the ports. Such a policy would benefit the Indian consumer both ways.

Lastly, the present increase in the freight rate on all goods traffic is unhealthy, especially as the commodity markets have not yet begun to respond to the influences of the war. A general rate increase is always bad, especially in the case of important food grains like rice. These could be very well exempt since the export traffic in this case is not much. For the import traffic, probably, the increase may be justified for the reasons stated in the previous para. The Acworth Committee denounced the sur-tax on railway freight traffic levied during the last war. On all these counts, therefore, the conclusion is inevitable that the freight rates on such a important staple food as rice needs revision.

CHAPTER V

SOME ASPECTS OF RAILWAY ADMINISTRATION

IN this chapter we propose to discuss some problems of administration and, in doing so, the revenue considerations are mainly kept in view. Post-war railway financial history has been a dismal record of frustration. Our railways have not been able to tackle the situation with sagacity, and for this they are as much to blame as the conditions under which they have been forced to function. The two outstanding events of this century have been the vast world conflagration, which drew into its vortex the major countries of the world and engaged them in a death struggle, and the world depression. The second event has been no less cataclysmic. The world depression that came in the Autumn of 1929 has completely shaken our economic fabric to its very foundations and has set economists a very knotty problem to solve. These together have led to an unhealthy state of affairs characterised by extreme disquiet. They have led to anarchy in moral values and have given an unhealthy and wrong twist to those psychological influences that motivate action. Economics, it need hardly be reiterated, being a study of man in the pursuit of wealth, psychological factors determine those business activities which, unfortunately, are subject to vast cyclical fluctuations—the bane of an economic system that bases itself on the principle of individual initiative. These calamities thus tended to retard development and to set the clock of progress back. Confidence has given place to suspicion, and suspicion is the child of fear. This sense of despair is highly detrimental to prosperity, and in the absence of general economic prosperity, the railways cannot but be expected to suffer. The period of depression has been one of lean financial years during which, inspite of the best endeavours of the

transportation agencies, deficit budgets have been the vogue. Thus, the great problem for the railways has been to devise ways and means whereby they could work economically and efficiently. No doubt, the experience of the past couple of years has been encouraging. With the revival of trade and business there has been an inflation in railway earnings, so that they have been able to resume their contribution to the general revenues. Nevertheless, the period of stress for them is not yet over, and it almost looks as if some evil Cadmus had sowed dragon's teeth wherefrom a crop of problems have been besetting the railways, calling for clear thinking and wise stewardship. The dragon of uneconomic road competition has raised its head and threatens to draw to it the traffic that should legitimately belong to the railways. This problem will be duly dealt with in its proper place later. All that needs emphasis is that if the railways are to maintain their position as purveyors of traffic and to effectively stem the tide of road competition they must mercilessly economise in their expenditure and should, by the quotation of cheaper rates and the offering of better facilities, conserve the advantages of traffic that they have built up by a process of trial and error through the years.

The gravity of the situation was duly recognized by the Otto Niemeyer Committee on provincial finance which submitted its report to the Secretary of State for India on the 6th of April, 1936. Referring to the railway contribution to the General-revenues the Committee remarked:—

“ The position of the railways is frankly disquieting. It is not enough to contemplate that in five years' time the railways may merely cease to be in deficit. Such a result would also tend to prejudice or delay the relief which the Provinces are entitled to expect. I believe that both the early establishment of effective co-ordination between the various modes of transport and the

Road-Rail Transport

thorough-going overhaul of railway expenditure in itself are vital elements in the whole Provincial problem.”¹

The tabular statements of gross revenue receipts, working expenses and net receipts of State-owned railways appended at the end of the book² give a statistical record for the past fourteen years commencing from 1925-26 which has been chosen as the base year because it was then that the Railway budget was separated from the General budget. It will be seen therefrom that the total gross revenue receipts in 1925-26 were Rs. 99,72,45,000. The next year records a decrease of nearly Rs. 60 lakhs. In 1927 earnings shot up to Rs. 1,04,34,01,000 and in the succeeding year they were at the record figure of Rs. 1,04,58,71,000. The year 1930 marks the downward phase of the depression and in 1932 they reached the lowest figure, Rs. 85,58,36,000. Since then, there has been a gradual improvement and in 1936-37 earnings for the first time exceeded Rs. 10,000 lakhs. Earnings for 1937-38 were Rs. 1,00,30,06,000. The contribution to general revenues in 1924-25 was Rs. 678 lakhs. In the next year, there was a fall of Rs. 129 lakhs over the previous year's contribution and in 1926-27, 1927-28, 1928-29, 1929-30 and 1930-31, the corresponding contributions were Rs. 601; 628; 523; 612 and 574 lakhs respectively. The years till 1937-38 saw no tangible improvement in the capacity of the railways to pay, and it was only in the financial year 1937-38 that, for the first time since the setting in of the depression, a contribution of Rs. 276 lakhs was made. This figure bears no comparison to the Rs. 678 lakhs contributed in 1924-25. The estimated contribution (revised figures, excluding Burma railways) in 1938-39 is Rs. 205 lakhs and that for 1939-40 is budgetted at Rs. 213 lakhs. Turning to the Railway Reserve Fund, we observe that the transferences

1 *Vide* Otto Niemeyer Committee Report.

2 *Vide* Appendix A. 5.

to this Fund cease with the year 1928-29 when Rs. 258 lakhs were so set apart. In the next three years which were particularly lean ones, 208, 10,93 and 495 lakhs of rupees were withdrawn; while gross revenues were declining, operating expenses showed no marked reduction. In 1924-25, the operating expenses for the state-worked lines which were Rs. 51,65 lakhs increased to Rs. 55,59 lakhs in the year 1929-30. Subsequently, there was a reduction in the years 1931-35, the minimum being Rs. 49,08 lakhs in 1932-33. The revised figures for 1938-39 under this head are Rs. 50,99 lakhs, and for 1939-40 it is budgetted at Rs. 51,67 lakhs.³ It was during these seven years—1930-1937—that the railways were facing acute financial stringency so that the Public Accounts Committee reporting on the accounts for 1934-35 remarked that “even after allowing for a continuous, if moderate, trade improvement for all probable debt conversions and for the effect of the new revised pay scales for new entrants, we cannot see how, at the end of three years from now, the railways can be less than 7 or 8 crores short of full commercial solvency. There would, moreover, still be a substantial deficit if we regard it as legitimate to go on making no provision from revenue for writing down capital, and equally this would be the case if credit is taken for the losses on strategic railways and for charging Government Departments full public rates—charges which, we repeat, we by no means recommend.”

“This is an alarming prospect and in our view things cannot be left where they are now. We would urge, therefore, that the Government of India should immediately obtain the services of an acknowledged expert in railway management to conduct an examination of the whole field and recommend steps which will secure definite (i.e., other than mere hopes of increased revenue due to

3 Railway Budget for the year 1939-40.

Road-Rail Transport

improving trade) improvements in railway finances to the extent of something like 3 crores a year immediately, and ultimately of such magnitude as is required to maintain full solvency on a strict accounting basis. And to avoid misconception we add that the terms of reference should exclude the possibility of securing this end by a mere transfer of liabilities to general revenues.”⁴

Consequent upon the recommendations of the Sir Otto Niemeyer Committee, the Indian Railway Enquiry Committee was appointed on October, 20, 1936 with Sir Ralph L. Wedgwood as Chairman. The terms of reference to the Committee were:—

“ To examine the position of Indian State-owned railways and to suggest such measures as may, otherwise than at the expense of the general budget, (1) secure an improvement in net earnings, due regard being paid to the question of establishing such effective co-ordination between road and rail transport as will safeguard public investment in railways, while providing adequate services by both means of transport; and (2) at a reasonably early date place railway finances on a sound and remunerative basis.”⁵

The Committee made a thorough investigation of the whole problem and made a number of recommendations which will be referred to presently.

Financial stability depends upon two factors: economic expenditure and increased earnings. These two factors together, in their turn, determine the basis of charging. It is the general complaint against our railways that the rates press too heavily upon industry and trade. We have, elsewhere, examined the degree of regression of principal freight rates. The Wedgwood and other previous Committees have pointed out that the Indian rate basis is the

4 *Vide* Otto Niemeyer Committee Report.

5 Report of the Indian Railway Enquiry Committee 1936-37.

lowest in the world so that they could not find themselves in sympathy with the grievance of the various Chambers of Commerce that there should be a reduction in railway rates. "A general reduction of charges" the Wedgwood Report remarks "is never calculated to increase gross revenue, and net revenue still less. It can only be looked upon as desirable from the policy point of view either for the purpose of keeping railway charges in step with world wide price movements, such as occurred after the post-war boom, or when railways have a large surplus in hand and are disposed to distribute it in form of lower charges to their customers generally." ⁶ However, they averred that the situation did not call for any such reduction. The other complaints were that there were too many class and schedule rates and that the adoption of the continuous mileage system was a prime essential. Regarding the first complaint, mention has been made in the chapter on "Rate Making in Practice" that when the variety of the commodities that offer for traffic is considered, our freight rate list errs rather on the side of brevity. The non-adoption of the continuous mileage principle is grossly iniquitous. India is a vast subcontinent of great distances served by a plurality of lines, so that the free and easy movement of through traffic is hampered by regulations which lay down that each administration should charge for the actual distance travelled on its line without heed to the continuous nature of the traffic. When this is done, the shipper of such consignments has to pay a very heavy freight bill which increases the incidence of rates on his commodities. In our study of freight rates in relation to prices, we have had instances wherein the rate of incidence is as high as 35 per cent. We saw that local rates, by virtue of the shortness of the haul, form a small percentage of price, but that the rate of charge was 350 per cent, of

⁶ Report of the Indian Railway Enquiry Committee 1936-37, p. 77.

Road-Rail Transport

that in the case of long distance traffic. Needless to say, the adoption of the continuous mileage system would enhance this percentage considerably and render more glaring the regressiveness of the basis of short distance charges. Nevertheless, it must be admitted that it is a fundamental principle in transportation, which is subject to the laws of decreasing costs, that the longer the haul the less should be the freight. The Wedgwood Committee whose attention was pointedly drawn to this question meet it apologetically. Their answer partakes of the nature of a smug acceptance of an indubitable principle of transportation economics and partly of an honest confession of inability. We shall let them speak for themselves. At first they admit that "it is difficult to resist the contention that apart from break of gauge and transshipment, the natural and logical method of calculating the rate is upon the throughout distance, not upon a series of 'discontinuous' distances." A few paragraphs later they say "the application of the 'continuous' mileage principle, where the 'discontinuous' principle is now applied, can only involve rate reductions; this course, therefore, would involve heavy losses to the railways, the extent of which cannot be computed; and there is no ground for supposing that there would be a countervailing increase of business to them. The losses might indeed be so heavy as to cripple railway finances, and we can see nothing in the circumstances to justify such a risk being taken." ⁷

That such a statement should issue from a learned body like the Wedgwood Committee causes some surprise. It has been the practice in all the civilised countries of the world to accept this principle of rate making. That forms the very basis of trunk-line rate making in America. In the U.S.A. there are two prevalent types of rates—the

⁷ Report of the Indian Railway Enquiry Committee 1937, p. 81.

group rates and the trunk-line rates. It has been the practice of the Inter-State Commerce Commission to make the same rate or rates between all points within a certain zone. For this purpose, the continent is divided into administrative groups for freight purposes. The merit of the plan lies, as the Inter-State Commerce Commission themselves assert, in keeping producers within a certain zone on a footing of equality.⁸ The advantages of such a system do not need to be emphasised. In our study of freight rates we had occasion to observe how the freight proportion of general costs for different shippers vary with the distance traversed. If, as in America, we could adopt this system in India it would confer a great blessing on us. This is particularly desirable since we are mainly an agricultural country wherein the main producing regions of particular commodities lie in certain well-defined areas. Thus, for example, the area south of Madras is mainly a groundnut producing region so that this could be formed into a group wherein equal rates could be levied. But, in view of what such a responsible body as the Wedgwood Committee have said, one wonders whether our railway administrations would ever devote any thought to it. When even the adoption of such an elementary principle as the continuous mileage principle is decried, there would be no chance for the acceptance of a method which would necessarily involve considerable administrative trouble. The fear expressed is that the cumulative mileage principle would lead to a reduction in freights and consequently to a loss in earnings, and that it could be advocated when, and if, railway earnings showed a considerable surplus. However, one feels that this principle should be absorbed into our railway system. Since the major railways will be shortly owned by the State, the need for its adoption is felt all the keener. Under private

8 Sharfman: The Inter-State Commerce Commission.

Road-Rail Transport

management which fixes its aim mainly on profits, there may be some difficulty entailed in its adoption. Moreover, the period of deficit budgets is definitely over and the railways have started paying their contributions to the general revenues. According to the revised estimates for 1938-39, there is a surplus of a little over two crores of rupees. The net railway earnings are estimated at Rs. 31½ crores. Total receipts are expected to be 94½ crores and total expenditure including depreciation, a little over Rs. 63½ crores.* For 1940 the surplus anticipated is 213 lakhs.⁹ Thus railway earnings are on the up grade, and there is a revival in business due to the increased demand for traffic entailed by the war. Some idea of the increased pressure and income of railways could be had from the following up-to-date approximate figures for gross earnings and working expenses of State-owned railways from 1st April, 1939 as compared with the actuals for the corresponding period of the previous year.¹⁰

Railways.	Working Expenses.		Gross Earnings.	
	Up to 31-1-39.	Up to 31-1-40.	Up to 31-12-38.	Up to 31-12-1939.
	(in lakhs).	(in lakhs).	(in lakhs).	(in lakhs).
	Rs.	Rs.	Rs.	Rs.
A.B. ..	158	164	89	88
B.N. ..	77	877	417	429
B.B. & C.I. ..	978	994	430	428
E.B. ..	489	506	297	301
E.I. ..	1718	1747	791	795
G.I.P. ..	1064	1104	516	504
M. & S.M. ..	598	617	279	280
N.W. ..	1362	1339	687	679
S.I. ..	437	432	215	210
Tirhoot and Lucknow-Bareilly.	169	162	59	62
Other Railways ..	42	44	20	21
Total ..	7,792	7,986	3,800	3,797

* Includes Suspense but excluding appropriation to and from the Depreciation Fund.

9 Railway Budget for 1940.

10 *The Capital*, February 22, 1940.

In view of the general increase in earnings, especially after the outbreak of the present war, one feels confident that the acknowledgment of the cumulative mileage principle in the case of through traffic would increase earnings. There seems to be no justification for the view held by the Wedgwood Committee that the adoption of that principle would not lead to any net increase in traffic earnings. It is bad enough that such a confession should come from such an authoritative body of railway specialists; what is worse is that, due to pressure on the railways, there has been a $12\frac{1}{2}$ per cent increase in rates in the case of goods traffic and $6\frac{1}{4}$ per cent for passenger fares. "Making hay while the sun shines" may be a sound moral precept, but to put it mercilessly into practice, in problems of administration where the larger national interests have to be considered, bespeaks lack of foresight. The *Capital* in its editorial of the 22nd February, 1940, appositely sums up the position in language that deserves quotation:—

"The real problem before the Indian railways is, as we have argued for a long time past, one of increasing net receipts. With attenuated receipts and abortive attempts at economy over a decade of financial frustration a solution is now hazarded for increasing revenue through higher rates. Despite the reduction in interest charges and astronomical figures of job-analysis economies, working expenditure for the ensuing year stands higher than the peak figure of previous prosperous years. The urge for economy appears to have worn off, and there is less reference to it in the present budget speeches. We have like a Cassandra called attention since 1930 to the anomalies in the trends of expenditure since 1924 and these have remained largely unchecked. The exigencies of war may tend to obscure them through emphasis on other problems only to be faced in an exaggerated form when

Road-Rail Transport

the emergency is over. The spectre of the accumulated liabilities now totalling Rs. 61 crores has been laid at rest till 1942, thanks to the expedient of the moratorium last year. That the present proposals are designed not to deal with the fundamental defects in railway finance, but only to meet the normal liabilities of the railways during the budget year, exposes the essential weakness of the present railway policy. After nine years of forthright suspension or partial payment of the contributions, it is interesting to observe the sudden anxiety on the part of the Railway Department to pay not only the full contribution, but to provide out of the generous rate increases a reserve of Rs. 3 crores as well.”¹¹

The Pope Committee of 1934 drew pointed attention to this problem of freight rates and said that too rigid a structure of rates and fares was not in the interests of business and trade. Nor was it in the interest of the railways themselves, for better business means better traffic. That Committee did not find itself opposed to rate reductions. The railways had to read off the barometer of business to note the nature and intensity of the traffic offering with a view to maximising receipts. It should be the aim of railway policy to get all the traffic that is available. In doing so, particular circumstances may call for particular rate reductions. Nevertheless, when there is an all round increase in the demand for transport, rates should be so adjusted as to suit the needs of trade. Thus a lower rate would, by inducing heavier traffic, lead to a betterment of the financial position of the railways. Moreover, it is an acknowledged fact that the competition that the road offers to the railway has been increasing in severity. At present, such competition is almost mainly restricted to passenger traffic, there being not much in the case of goods traffic. The present passenger fares of 3½ pies

¹¹ *The Capital*, February 22, 1940.

per mile are not sufficiently low to meet the rates fixed by the motor bus which is therefore able to increase its clientele. The rates do not sufficiently attract since they taper in the vicinity of 300 miles for third class traffic. Actually, however, the bulk of passenger traffic is short distance, the average lead being about 40 or 50 miles. If revenue is to increase, low rates should either bring about an increase in the volume of traffic or an increase in the average lead per passenger, *i.e.*, there should be either heavier traffic or a longer average distance travelled by a passenger. It is in the third class only that this lead is so short that, if there were to be an increase of even one mile to this lead of third class passengers, it could be expected to lead to a considerable increase in revenue. The third class passenger is the largest contributor to the railway revenues, but he is at the same time the person who has to undergo great difficulties. The Statistical table¹² appended gives the earnings from each class of passenger, the total number of passenger miles and earnings therefrom and lastly, the average miles a passenger was carried. As regards the last, it will be seen that the average distance travelled by a third class passenger is about 35 miles, and there does not seem to be very great variation in this figure. There is, however, a very great divergence in the case of upper class passengers. In 1925, the average distance for a first class passenger was 107·6 miles and in 1937-38 it is 212·5 *i.e.*, nearly a cent per cent increase. So too in the case of the second class passenger; the corresponding figures are 38·6 and 78·7. The earnings from third class passengers has averaged Rs. 30,00,00,000. There has been a sharp fall in earnings under this class. In 1925-26, the earnings amounted to Rs. 34,76,54,000; it continued at this figure with slight variations till 1929-30. The next year saw a fall by Rs. 4 crores, the worst year

12 *Vide* Statistical Appendix A. 6.

Road-Rail Transport

being 1934-35 when they were 27 crores *i.e.*, a fall of seven over the 1925 earnings. During the last year under review *i.e.*, 1938-39 they have again improved to Rs. 27,34,10,000. The average rate charged per mile of third class travel was 3.47 pies in 1925 and 2.97 in 1937-38. The motor buses which are specialising in passenger transport, wherever they are in competition with railway services, work on a much smaller basis so that they are able to offer effective check to the monopolistic position of the railways.

How then could the railways better their position? They could do so in two ways—either by increasing revenue or by effecting greater economy. Time and again, it has been constantly brought to the notice of the public that railway expenditure is almost out of proportion with the traffic handled and that there is considerable scope for economy. The greatest difficulty in railway administration which offers stubborn resistance to any rate decrease is the fixed nature of the working expenses. The ratio of working expenses to Gross Traffic receipts including contributions to the Depreciation Fund has always continued at a very high figure. In 1924-25, when the separation of railway finances was effected, this ratio was 61.9%. For the next five years it ranged about 64%; but in 1930-31 it shot up to 70.9, the maximum percentage being 73 in 1932-33. Thereafter, there has been a fall and in 1937-38, the percentage is 65. In comparison with other railways, the Indian railways seem to fare better. The operating ratio for the Canadian Pacific Railway which was originally 79.5% in 1929 stood at 83.64 in 1937. Similarly, for the Canadian National Railways the operating ratio in 1937 was 74.87% and for the four amalgamated British Railways it has been 81.6%. Turning to the net revenue receipts, we observe that there has been a steady improvement in the position in the post-depression period. Our net revenue in 1924-25 was 35 crores and 71 lakhs, and it

Railway Administration

fell to 21 crores and 86 lakhs in 1932. Thereafter, the position has gradually bettered till in 1937-38 it stood at 32 crores and 2 lakhs of rupees.¹³ The net railway revenue, according to the revised budget estimate for 1938-39, is expected to be Rs. 31½ crores.

Probably the largest single item of expenditure which is a feature of all railway administrations is the high interest charges. A huge amount of capital has been invested in the railways on which there is a constant annual recurring expenditure under the head of interest charges. The capital at charge for the period since the separation was effected in 1924 is represented below; and alongside it are shown the interest charges.

Year.	Capital at charge (in crores).	Interest charges (in lakhs).	Percentage of Interest to Capital.
1924	635	23,90	3.8
1925	654	24,81	3.8
1926	681	25,87	3.8
1927	714	27,27	3.8
1928	739	29,33	4.0
1929	770	30,46	4.0
1930	783	32,72	4.2
1931	790	33,07	4.2
1932	789	32,91	4.2
1933	787	32,58	4.1
1934	787	31,80	4.0
1935	789	31,39	4.0
1936	789	30,89	3.9
1937	754	29,26	3.9
1938	755	29,28	3.9
1939	760	28,96	3.8

} Excluding
} Burma
} Railways.

Thus, it would be seen that a considerable part of railway earnings go towards the interest charges, and a good part of this, it should be reiterated, goes out of the

Road-Rail Transport

country and thereby represents a loss to the nation. Of course, one must admit that it is payment for capital that has been used in the economic development of the nation. Due to its very nature a reduction in the interest charges is a step that cannot be feasible, more so, because it is just about 4%. A reduction of this percentage to 3 would, however, result in a considerable gain of about seven crores of rupees. The Pope Committee on retrenchment in railway expenditure scrupulously avoid broaching this issue and pass it by with the casual, yet pregnant, remark that it is "stubborn in character."

The other very important item of expenditure of the railways, constituting a first charge on its receipts, is the contribution to the General revenues. It is common knowledge that prior to 1924 the Railway budget had no separate existence. As it was in the General Budget, it constituted a menace to budget making. Deviations of the actuals from the estimates in railway administration reflected themselves in severe fluctuations in the General budget and also had a hampering effect on the smooth continuity of railway policy. The Acworth Committee of 1924 found in this cause for grave concern and condemned the system in set terms. They said, "We do not think that the Indian railways can be modernised, improved and enlarged, so as to give to India the service of which it is in crying need at the moment, nor that the railways can yield to the Indian public the financial return which they are entitled to expect from so valuable a property until those financial methods are radically reformed."¹⁴ This they sought to bring about by the separation of the two budgets and the creation of a separate department for the railways. The railway contribution is, therefore, a return paid to the general revenues for the moneys expended on the railways. The contribution is determined

14 Indian Railway Committee 1920-21, p. 21.

by the capital at charge and working expenses of the commercial lines. It is a sum equal to one per cent of the capital at charge of these lines plus a fifth of the surplus left over after meeting the fixed charges. If, however, during any year, as in the period 1931-37, the railway revenues are insufficient to meet this first charge on their earnings i.e., one per cent of capital at charge in full, then any such deficiency would be deducted from the surplus earnings in subsequent years before the share in the surplus is determined. During these years, the unpaid contribution to general revenues amounted to 32.32 crores and was constituted as follows:—

1931-32	5.36 crores.	1935-36	4.99 crores.
1932-33	5.23 „	1936-37	4.91 „
1933-34	5.21 „	1937-38	1.58* „
1934-35	5.04 „		

* This is exclusive of the 276 lakhs paid to general revenues during the year.

The payments stop with the year 1930-31 which marks the commencement of the period of falling earnings and deficit economics. The year 1937-38 has been the first year in which contributions have been resumed. The estimated contribution in 1938-39 is Rs. 205 lakhs and that in 1939-40 is, according to the Budget estimate, 213 lakhs. These, it must be remembered, are not full contributions but only represent the net surplus available for such payment. The net capital at charge during these two years has been Rs. 7,54,78 lakhs and 7,59,53 lakhs of rupees so that the payments actually due must be more than thrice the sum paid. (The figures for these two years are exclusive of the Burma Railways).

There has been considerable criticism of the absorption of foreign capital for railway construction in India, on the ground that foreigners get the benefit of interest charges which amounted to 29.28 crores in 1938-39. It is, however,

Road-Rail Transport

forgotten that these railways were built at a time when Indian capital was shy. All new enterprises are risky, more so railway construction whose financial prospects cannot be gauged at the beginning. Thus, foreign capital was invested in India at a time when the risks entailed were greatest. The ground had to be cleared before the railways came to be recognized as a sound financial venture. These initial losses had to be borne by British capitalists. The Indian External Capital Committee went through the matter dispassionately and held the view that such capital should not be decried because of its foreign nature. It expressed itself thus:—

“ Though in certain circumstances the control of external capital may be necessary in the interests of India, general measures discriminatory against it or penalising it either by way of taxation or by way of control, would so far from assisting the development of these resources or fostering the interests of the Indian investor, be definitely injurious to both as they would impede the growth of new industries and restrict the transferability and, consequently, the market value of the holdings of the Indian investor.”¹⁵

Blind criticism is, therefore, a fallacy. In the dispassionate study of problems of economics, politics should not jaundice our vision. It must, therefore, be admitted that much of our development has been in the main due to foreign capital without which railway development would have been much impeded.

STRATEGIC LINES.

In modern life, inspite of all the effeminate tendencies of civilisation, the military needs of nations far outweigh other considerations. Rampant nationalism dictates a policy of military safeguards, and it is but a natural corollary of this that the transportation fabric should be

15 Indian External Capital Committee, p. 15.

so spread out as to facilitate easy and rapid movements of troops and units during times of emergency. Such expenditure, therefore, forms an important part of the Railway budget, more so in a country like India which has gaps in its natural mountain barriers that have to be guarded against probable invading hosts. Afghanistan in the North-West has been the running sore in British-Indian administration; and from early times, the problem of control over these mountain gateways of Hindusthan has always vexed politicians and administrators. It was left to that far-sighted statesman—Lord Curzon—to appreciate the importance of the railways in linking up the headquarters of Government with these vulnerable gaps in the Indian land frontier. He initiated the policy of constructing strategic lines connecting the Imperial capital with these passes at the entrance to which British units were stationed for purposes of defence. Needless to say, the construction of these was decided upon purely military reasons. As such, no attention was paid to the financial aspect of their administration. By their very nature, therefore, these lines cannot be expected to pay their way. They necessarily constitute a drag on the public purse.

When the question of the construction of these military lines came up for consideration during the viceroyalty of Lord Ripon, it was suggested that the estimated cost of five million pounds should be met by raising a loan for that specific purpose and that it would be wiped out in thirty years' time with the aid of a sinking fund. There was another school of thought which condemned this suggestion of raising a separate loan for this purpose. The Secretary of State for India opined that the military needs of transportation should not be kept apart from the famine needs of the country. Thus, when the railway budget was separated from the General budget, it was specifically laid down that "the interest on the capital at charge of, and

Road-Rail Transport

the loss in working, strategic lines shall be borne by general revenues and shall consequently be deducted from the contribution so calculated in order to arrive at the net amount payable from railway to general revenues each year.”¹⁶ Prior to this separation, these railways were financed out of the ordinary railway programme and the capital at charge of these lines was included under the North Western Railway, 43% of whose entire length comprised of strategic lines. For the first time in 1922 it was accepted that the accounts for these lines should be kept apart from those of commercial lines, so that today we have separate figures relating to these.

The abstract below gives the relevant figures for these lines for the triennium ending 1939.

(IN LAKHS OF RUPEES).

Particulars.	1938-1939.			Budget 1939-40. (estimate)
	Accounts 1937-38.	Budget 1938-39.	Revised 1938-39.	
Gross Traffic receipts ..	145	150	146	145
Working expenses ..	141	150	136	142
Depreciation ..	56	57	57	56
Total working expenses ..	197	207	193	198
A. Net traffic receipts ..	—52	—57	—47	—53
Micellaneous Receipts:—				
Interest on balances of				
Depreciation Fund ..	9	10	10	11
Miscellaneous Expenses.	—1	..	..	..
B. Net Miscellaneous receipts ..	10	10	10	11
Net Revenue (A—B) ..	—42	—47	—37	—42
Interest charges ..	133	133	132	130
Net loss in working ..	175	180	169	172

¹⁶ Resolution regarding the separation of railway from General Finances, adopted by the Legislative Assembly on the 20th September, 1924.

From this statement, it could be deduced that gross traffic receipts have a tendency to keep very nearly constant round the figure 1,45 lakhs. Under working expenses there have been changes. In 1937-38 they were 141 lakhs; in 1938-39 according to the revised estimate, they were 136 and in 1939-40 are expected to be 142. It will be noticeable that there is a wide divergence between the budget and the revised estimates for 1938-39. It is these working expenses, therefore, that largely determine the gain or loss in working these lines, since the figures for gross traffic receipts, interest and depreciation are fairly constant. There is a decrease of six lakhs of rupees in the net loss in 1938-39 which is mainly due to a credit adjustment under working expenses. This credit will not recur in the next year, but a saving in the interest charges due to the fall in the rate of interest may be set off against this. Nevertheless, an increase of three lakhs of rupees is expected in the net loss of administering these lines. It will, thus, be seen that these sections of railways are a drag on the general revenues, but that they have to be maintained for the larger purposes of military defence.

WORKING EXPENSES.

The largest single item in railway expenditure is the cost of actual running. It alone, excluding contributions to the depreciation fund, forms more than 50% of gross traffic receipts. In 1924-25 it was 51.6%, rising to a maximum of 57.2% in 1930-31, and then it fell to 51.6 in 1937-38. The working expenses include the maintenance of structural works and of locomotives and rolling stock, and above all, expenses of the Traffic and General Department. The expenditure incurred with regard to the electrified sections are also shown under this head. There has probably been no single item of railway policy that has come in for so much of criticism as railway expenditure. The railways had been once condemned for their niggardliness,

Road-Rail Transport

and now it is said that they are not as economic as they ought to be. The Acworth Committee during its sittings was, time and again, told of the acute shortage of rolling stock and the consequent poverty of transportation facilities. The impotence of the railways was so great that large stocks of grains and foodstuffs had to lie idle awaiting shipment stacked on the platforms in the open, exposed to the vagaries of the weather. The demand for wagons was so great and the supply was so small that railway officials had to be cajoled into allocating wagons to individual traders. We have the very high authority of Sir John Hewett, an ex-Lt. Governor of the United Provinces to testify to this. In his evidence tendered in London he says:—

“ From enquiries which have been made, it appears that the block first became noticeable in December 1911, when all goods traffic passing from the Bengal and North-Western Railway via Anwarganj (Cawnpore) to the Bombay Baroda and Central India Railway was stopped for four days. In January 1912 also, bookings by this route were much restricted, while the transfer of goods from the Bengal and North-Western Railway at Bara Banki for broad gauge lines was still more hampered. Owing to the accumulation of metre gauge wagons at that station, the contents of which could not be taken over, the Bengal and North Western Railway was compelled to suspend all bookings on its line for Bara Banki from 11th January to 23rd January, and again from 1st February to 14th February and 18th February to 7th March.”

“ On 1st March, the quantity of grain lying at railway stations on the Bengal and North-Western Railway in a single district (Gonda) amounted to 132,922 maunds, while 87,586 maunds were awaiting despatch in bazaars close by. In the middle of April, the Deputy Commissioner of Khari saw hundreds of bags of maize which had been

lying on a station-platform exposed to the weather since December and January. The bags had rotted and could not be lifted. The maize was musty, badly attacked by weevils and probably unfit for human food. In March last, the Lieutenant Governor himself saw considerable accumulation of jagri at the goods station of the Rohilkhund and Kumaon Railway Company at Bareilly which had been lying there for a long time intended for despatch to Rajputana by the Jodhpur-Bikaner line, but detained at Bareilly because it could not be booked beyond Keshganj. This jagri had nearly all been spoilt and become unfit for consumption. There was at one time some danger of a failure in the supply of coal for the large municipal water-works, only averted by a direct appeal to the railway authorities, who were able to spare sufficient to keep the engines going. The collection of metal for road repairs has been much delayed and the trade in timber and bamboos has been seriously hampered.”¹⁷

This is a pathetic picture of the great odds against which we had to fight as recently as 1921. It is now nineteen years since this evidence was submitted, but nineteen years have not been sufficient to wipe off this inability in its entirety. Today, Chambers of Commerce are still vociferous in their clamours, and the acute wagon shortage has been referred to in the chapter on coal. True, endeavours have been made to tide over the difficulties caused by this shortage, but the evil has not been completely exterminated. Our railways need not feel that they are the only sinners in this respect. Railways all over the world have, in their initial stages at least, suffered likewise, and Australia affords a picture which would offer us some solace. The following extract from an Australian paper is noteworthy:—

“ Farmers in some districts are forced to suffer pecuniary loss owing to the deterioration of the stacks of wheat

17 Acworth Committee Report, Vol. 2, paras 8423 & 8441.

Road-Rail Transport

and chaff lodged months ago at the railway sidings, and their inability to realise on last year's crop is a serious embarrassment in retarding the development of their holdings. The great majority of settlers are still in the struggling period, dependent upon the proceeds of one year's work to carry them through the ensuing season, and, unavoidably, their disabilities react on the metropolitan firms who act as their agents and financial backers. The position reflects discredit upon State enterprise. There has been a signal neglect to make due provision for requirements that were inevitable." 18

The root cause of all these difficulties was attributed by the Acworth Committee to inadequate finance. This Committee found fault with the then-prevalent system whereunder allotments were made to the railways. Under such a system, the Finance Minister would set apart a certain sum for railway purposes, but if he found need for further moneys, the only course open to him was to reduce the expenditure on renewals and extensions allocated to the railways. Thus, the railways were starved of their requirements. This malady was an integral feature of that system so that the Mackay Committee of 1907 recommended that a fixed sum of £ 12,500,000 should be set apart for capital expenditure on the railways. The evils of such a policy became evident when the railway officials rushed through schemes of extension with breathless haste and inefficient and insufficient men and materials to utilise the money that came their way, for any unspent money during the year lapsed to the Government. The " guillotine of lapse " was as portentous as the sword of Damocles. Thus, the railways were perpetually kept in a half-starved condition, bereft of all power of expansion. Colonel Cameron of the Assam Bengal Railway remarked that " dependence on the general financial position of

18 *Western Mail*, March 3, 1912. Quoted from Pratt.

the Government from year to year causes embarrassment, money sometimes not being available when required, and at other times being extravagantly expended in a rush to avoid a lapse.”¹⁹

The evil is not a special defect of Indian railways. The South African railways were similarly struggling against the fear of inadequate and irregular finance. In the absence of certainty with regard to money available for capital expenditure, the freedom of the railways was limited. The General Manager of the South African railways in his Administration Report for 1925 observed plaintively:

“ Each year, when the estimated cash requirements necessary for the expansion and improvements of the whole of the assets and equipments of the undertakings controlled by the Administration were presented for recommendation to Parliament, the Minister fixed upon a sum of so many million sterling, and intimated that nothing more than that sum would be appropriated for the whole of the year’s requirements so that, regardless of the essential and extraordinary needs of the year under consideration, the Administration’s officers had perforce to make the best of the position with the money at their disposal.”²⁰

To add to this, the Natal and Transvaal collieries complained of a shortage of wagons for the transport of their coal. That such a thing should happen in the case of coal which is such an important item in South African exports causes some surprise. Thus, it would be seen that there are many points of similarity between the South African,²¹ Australian²² and Indian railways. Neither are

19 Report of the Acworth Committee—Vol. 1, p. 22.

20 Annual Report of the South African Railways, 1925.

21 *Vide* Railway Policy of S. Africa: Frankel.

22 The Australian State Railway Muddle: E. A. Pratt.

Road-Rail Transport

these the only railways of the world that have suffered so. Canada, Austria and Germany have had similar experience. Nothing is more consoling than the knowledge that we are not the only recipients of this treatment. Probably this, more than anything else, would serve to assuage our sense of grievance.

While this was the view expressed by the Acworth Committee, the opinion held by the various Retrenchment Committees is diametrically opposite. The general view is that there has been too much of uneconomic expenditure. The very system of railway expenditure has been condemned as top-heavy. During the last century, the railways were worked at a loss and, as such, were a positive drag on the General revenues. Between the years 1848 to 1901, the Government had to suffer a net loss of Rs. 75,95 lakhs. The financial losses of the administration of railways are shown hereunder:—

Year.	Loss (in Lakhs of Rs.)
1848-49 to 1860-61	6,42
1861-62 to 1870-71	16,74
1871-72 to 1880-81	19,77
1881-82 to 1890-91	15,57
1891-93 to 1900-01	17,45
Total	75,95

It is only since 1901 that any profits accrued. Unprofitable as even these avowedly commercial lines were, the administration came in for a great deal of criticism, and the very system of guarantee was assailed. The feeling entertained was, not that guarantee was given, but, that it led to wasteful construction and also burdened the Government with very heavy interest charges that had to

be met out of the General revenues.²³ It acted, therefore, like a double-edged sword; on the one hand, it prompted uneconomic expenditure and on the other, it saddled the General Budget with the onerous responsibilities of paying interest, most of which went into the pockets of foreigners. Such being the case, public opinion, which was against the continuation of this system, grew vociferous when the contracts with these companies were renewed. By doing so, the nation was deprived of a good part of the earnings that should have legitimately belonged to it. The grievance was that, as all the capital was subscribed by English enterprise, the whole of the profits went to the British, and this was estimated at Rs. 5½ million in 1894-95 by Dinshaw E. Wacha, who tendered evidence before the Royal Commission on Public Expenditure in India. In doing so, Wacha observed: "Had the Government itself constructed all railways by borrowed capital, the net profits after paying interest to the capitalists would have remained in the country for its better prosperity. The economic fact of an alien rule always draining the resources of the subject country was entirely lost sight of."²⁴ During 1901 to 1924-25, there were only two years when there was a loss of Rs. 186 and 927 lakhs respectively in 1908-09 and 1921-22. In that period the net gains or profits were Rs. 101,32 lakhs. Since the past 14 years ending with 1937-38 the State has received huge profits from seven railways i.e., 21½ crores from the East Indian, 20½ crores from the Bombay Baroda and Central India, about 6½ crores from the South Indian, 6½ from the Bengal and North-Western (Tirhoot), 5 crores from the Madras and Southern Maratha, 2½ crores from

23 Lord Laurence held very strong views on this question and advocated a policy of State Construction.

24 Evidence of the five Indian witnesses-in-chief submitted before the Royal Commission on Public Expenditure in India, p. 28.

Road-Rail Transport

the North-Western (Commercial Lines) and one crore from the Lucknow-Bareilly. On the debit side, it has had to sustain losses on 5 railways. Easily the largest was that from the Strategic Lines of the North Western Railway amounting to 26½ crores and the second was the Bengal-Nagpur with 17½ crores. The Assam Bengal Railway accounted for 6 crores, while the Eastern Bengal and Great Indian Peninsula Railways were responsible for 5½ crores and 1½ crores respectively.²⁵

Let us now examine the various items under working expenditure from 1933 to 1939. The figures relate to Indian Railways only and exclude Burma Railways:—

Abstracts.	(IN LAKHS OF RUPEES).						
	1933-34.	34-35.	35-36.	36-37.	37-38.	38-39.	39-40.
Maintenance of Structural work ..	8,24	8,45	8,43	7,86	7,94	7,75	7,80
Maintenance of Supply of Locomotive power ..	16,16	16,39	16,09	16,24	17,53	17,64	17,83
Maintenance of Carriage and Wagon stock ..	5,62	5,90	6,13	5,73	6,13	5,72	5,99
Maintenance of ferry steamers and harbours ..	28	30	27	27	29	28	28
Expenses of Traffic Department ..	10,34	10,48	10,42	10,59	10,63	10,00	10,02
Expenses of General Department ..	4,66	4,70	4,69	4,67	4,89	3,99	4,09
Miscellaneous expenses ..	4,32	4,21	4,21	4,18	4,33	4,32	4,32
Electric Service Department ..	1,20	1,22	1,18	1,16	1,20	3,79	3,82
Suspense ..	—2	—6	—5	12	7	1	—4
Emergency deductions from pay ..	—110	—96	—8	..	..	..	..
Total ..	49,70	50,63	51,29	50,82	53,01	53,50	54,11
Deduct—Recoveries from worked lines.	2,60	2,66	2,63	2,66	2,64	251	244
Net total for State-owned Railways.	47,10	47,97	48,61	48,16	50,37	50,99	51,67

From the foregoing abstract, it will be seen that working expenses, excluding depreciation, have been on the upgrade. They have increased by 10% in 1939-40 (Budget estimate), from 47,10 lakhs in 1933-34 to 51,67 in 1939-40. Taking

25 Railway Board Report for 1937-38.

Railway Administration

individual railways also, we find that there has been a tangible increase in expenses due to the heavier traffic, large repairs to rolling stock and rise in the price of coal.

The persistent rise in the working expenses has caused grave cause for anxiety. The position was specially bad during the depression years when, due to the sudden curtailment in railway earnings, the usual contributions to the General revenues had to cease abruptly and loans had to be taken from the Depreciation Fund for tiding over the difficulties. The extent of the burden inflicted could be appraised from the following figures of loans and dues:—

(IN CRORES OF RUPEES).

Year.	Loans from Depreciation Fund.	Unpaid Contributions to general revenues.
1931-32	4.25	5.36
1932-33	10.23	5.23
1933-34	7.96	5.21
1934-35	5.06	5.04
1935-36	4.00	4.99
1936-37	—1.21	4.91
1937-38	..	1.58
1938-39	..	2.38
Total ..	<hr/> 30.29 <hr/>	<hr/> 34.70 <hr/>

The situation was so unpromising that the Railway Retrenchment Sub-Committee were forced to say²⁶ “ that even a more extensive pursuit of the economy campaign

²⁶ Report of the Railway Retrenchment Sub-Committee, 1931, p. 68.

Road-Rail Transport

on which railways are now engaged, combined with a drastic reduction in the number of officers will not by themselves enable the railways to make good the gap (11 crores of rupees in net earnings required to enable Indian Railways to earn $5\frac{1}{2}\%$ on the Capital at charge).'' The most important item under the head of working expenses is the maintenance of Locomotive power. In 1937-38, out of a total working expenditure of Rs. 53.01 crores, this head accounted for Rs. 17.53 crores or 33% of total working expenses. The second largest item is the maintenance of structural works. In 1931, this came to Rs. 13.42 crores or 15.28% of working expenses; in 1937, it was equal to 7.94 crores or nearly 15%. In the year 1937-38, the money spent on the maintenance of carriage and wagon stock formed nearly 11.5% of working costs. The expenses of the Traffic Department come to another 20%.

Comparing the figures for 1937-38 and 1938-39, an increase of Rs. 118 lakhs is noticeable. This excludes the Rs. 18 lakhs due to the purchase of rail cars on the North-Western and the B. B. and C. I. Railways. The main increase is due to the larger expenditure on coal, partly due to a rise in its price and partly to the increased consumption consequent on increase in traffic. There was an increase of nearly a million in the goods and passenger train miles in 1937-38 as compared with the previous year, and a further increase of 1.4% was anticipated for 1938-39. This increase in train miles, it must be stated, has not been entirely due to an increase in the traffic offering, but to a lower load factor consequent on the provision of more trains and speedier services to meet the effects of road-motor transportation. There has been a simultaneous increase in the expenditure under repairs, both of rolling stock and to assets, because of the intensive use of the rolling stock. During the past few years the cost of

materials and rolling stock has increased so that the age of these has increased considerably necessitating replacements and renewals. Add to this, the havoc caused by floods accounted for an unforeseen expenditure of 55 lakhs of rupees.

The working expenses for 1939-40, according to the budget estimate for the year, shows a further increase of 70 lakhs of rupees, two lakhs of which is due to the appropriation to the Depreciation Fund. In the year under review, there has been a charge in the matter of apportionment of renewals and replacements from Depreciation to working expenses. Sixteen lakhs were apportioned for the purchase of rail-cars and 24 lakhs to the reconditioning of wagons on the East-Indian, Bengal-Nagpur and North-Western Railways. The type of wagons in use was found inadequate to meet the traffic needs. Moreover, the Wedgwood Committee had pointed out the inadequate wagon usage, especially on the broad gauge. An allotment of fourteen and a half lakhs of rupees is therefore made for expenses of reconditioning 7,000 wagons. In the previous year, due to a decrease in the average lead in coal traffic there was a fall of 20 lakhs in the earnings therefrom. There has, however, been an increase of 14 lakhs in the estimate of earnings, because of a longer lead.

There is a large works programme budgetted for the year 1939-40. These come under the category of works not chargeable to revenue, and are expected to cost 15 crores of rupees. A sum of 86 lakhs is allotted for the construction of four lines; the most important of these is the Sind Right Bank Feeders Railway requiring Rs. 73½ lakhs. Referring to this aspect of railway administration, the Chief Commissioner of Railways in his Budget Speech in the Council of State remarked: "The Capital provision includes Rs. 80 lakhs for the completion of the Sind Right Bank Feeder project and for the Khadro-Nawabshah

Road-Rail Transport

Railway, and the commencement of work on the Pithoro-Tando-Mitha Khan and the Kashipur-Kalagarh Railways. The last two projects have not yet actually been sanctioned by Government as there are certain details under correspondence with the Provincial Governments concerned. The construction of these three railways in Sind has been made possible by the co-operation of the Sind Government in agreeing to a co-ordinated scheme of road and rail communications. About Rs. 1 crore has been provided for the purchase of the South Bihar Railway, which, we believe, will be a sound financial venture. This is at present worked by the East Indian Railway who pay a yearly rental of £30,000 to the Company. In addition to the above, Rs. 4½ crores have been provided for track renewals; Rs. ¾ crore for bridge renewals; Rs. 2½ crores for structural works including Rs. 17½ lakhs for reconstruction work in Quetta; and Rs. 5 crores for rolling stock, this being divided into Rs. 171 lakhs for locomotives and boilers, about Rs. 149 lakhs for coaching stock and about Rs. 192 for wagons.”²⁷

There seems, therefore, to be great scope in the matter of retrenchment in expenditure. While the costs of capital renewals and expenses of purchases of rolling stock are increasing, there does not seem to be proper use of the supply on hand. A purview of the statistics relating to this will show how far economy could be effected. Taking first the stock of locomotives, it is found that it is excessive. In 1929-30, the total number for the Class I Railways were 5,818 for the Broad Gauge and 1,671 on the metre gauge. In 1935-36 the corresponding figures were 5,360 and 1,628 representing 92 and 97 per cent of the 1929-30 figures. Of these, quite a large number were under repair, so that the best use was not made of

²⁷ Railway Budget for 1939-40, p. 24.

Railway Administration

them. The following statistical table from the Wedgwood Committee Report throws much light on this:—

LOCOMOTIVES, NUMBER AVAILABLE FOR USE AND MAXIMUM²⁸ NUMBER IN USE.

Railways.	Average No. available for use.		Maximum Number in use on any one day.			
	1929-30	1935-36	1929-30		1935-36	
	1 No.	2 No.	3 No.	4 % of col. 1	5 No.	6 % of col. 2
<i>Broad Gauge.—</i>						
B. N. ..	549	537	519	94.5	476	88.6
B. B. & C. I. ..	269	295	258	95.9	238	80.7
E. B. ..	266	230	252	94.7	228	99.1
E. I. ..	1,326	1,335	1,274	96.1	1,116	83.6
G. I. P. ..	908	615	717	79.0	464	75.4
M. & S. M. ..	222*	231	206*	92.8	202	87.4
N. W. ..	983	1,040	937	95.3	792	76.2
S. I. ..	125	120	125	100.0	112	93.3
<i>Metre Gauge.—</i>						
A. B. ..	151	175	149	98.7	153	87.4
B. B. & C. I. ..	427	395	360	84.3	305	77.2
E. B. ..	177	182	169	95.5	143	78.6
M. & S. M. ..	288	291	267	92.7	243	83.5
S. I. ..	310*	312	308*	99.4	279	89.4

* Figures for the year 1928-29.

From the foregoing figures, it will be seen that the South Indian Railway is the one that makes the best use of its locomotives. In 1928-29 on the Broad Gauge there was not one locomotive that was not in use, while on the Metre Gauge only about two out of a total of 310 were unused. In 1935-36, as far as the Broad Gauge was concerned, the East Bengal had the best average; and the S.I.R. was second with 93.3 per cent. On the metre gauge, the South Indian Railway maintains its position of primacy. Another conclusion derivable from the foregoing figures is

²⁸ Wedgwood Committee Report, p. 23.

Road-Rail Transport

that there seems to be a larger number of unused locomotives on the Metre Gauge than on the Broad Gauge. The reason for this may be ascribed to the fact that a number of shuttle services at frequent intervals are run on the Metre Gauge lines so that a fair complement of locomotives would be necessary for emergency purposes as also for part-time jobs, such as taking off or laying-on wagons and carriages at junctions. The work performed by engines can be studied from the figures relating to "engine miles per engine per day." There is some slight difficulty with regard to this, since they may be calculated either on the number actually in use, or on the number on the line. There has been some improvement in this. Taking the South Indian Railway, the number of miles per engine per day in 1929-30 was 101 and 98 on the Broad and Metre Gauges respectively. In 1935-36 there was improvement by 14 and 7 per cent, the mileage being 115 and 105 respectively. The "in use" figures showed considerable improvement in 1937-38. The increase was from 111 to 114 on the Broad Gauge. There was, nevertheless, an increase in the percentage of engines under or awaiting repair, as far as the Broad Gauge was concerned, but there was improvement on the Metre Gauge, the percentage figures dropping from 13.3 to 12.6.²⁹

The wagon position also shows a similar state of affairs. The Wedgwood Committee as well as the Pope Committee found in their investigations that far too many carriages and wagons were available of which a large percentage was under repairs and that this did not reflect credit on the administrations. The South Indian Railway was the worst offender in this respect in 1928-29, since 14.2 per cent and 13.2 per cent of its carriages were either under or awaiting repairs. On the London and North-Eastern Railway the corresponding figure was only 8.2 per cent. There has now

²⁹ Railway Board Report, 1937-38, p. 43.

been an improvement in the use of wagons. The following table for wagon miles per wagon day for Class I Railways represents the advance statistically:³⁰

Railways.	1929-30.	1935-36.	1936-37.	1937-38.
<i>Broad Gauge.—</i>				
B. N. ..	31.7	35.5	36.6	41.3
B. B. & C.I. ..	30.9	33.1	31.5	38.5
E. B. ..	25.7	22.9	25.4	24.0
E. I. ..	40.4	34.6	36.0	40.1
G. I. P. ..	51.4	41.8	47.4	51.9
M. & S. M. ..	43.8	46.4	45.0	53.3
N. W. ..	36.1	32.1	34.9	38.5
S. I. ..	32.2	33.1	33.7	35.2

The broad conclusion that could be drawn from this is that there is now a better use of wagons, but that greater economy could be effected by reducing the number that is not in use. Further expenditure could be curtailed by suspending purchase of additional wagons. It is suggested that 5% should be a decent standard to be attained during ordinary times and that when traffic is heavy this should be as low as 3%. With regard to locomotives the Wedgwood Committee expressed themselves thus:—

“ The stock of locomotives is excessive and should be capable of reduction. Even in the event of a substantial increase in traffic, we consider it unlikely that, for the present at any rate, there will be need to face any considerable programme for the purchase of additional locomotives. New types will admittedly be required from time to time; even so, proposals for the purchase of additional locomotives should be closely examined, and the Railway Board should, in particular, satisfy themselves that all practicable steps have been taken to make

³⁰ Compiled from the Railway Board Reports (Vol. II) for the corresponding years.

Road-Rail Transport

the best use of the existing stock. Surplus locomotives, if likely to be required for further use, should be taken out of traffic and tallowed down.”³¹

A similar conclusion was reached with regard to the supply of coaches, and the statistics relating to the percentage of carriages awaiting or under repair showed a tendency to increase. Other measures they recommended were the introduction of mobile gangs as in Great Britain and South Africa so as to save time and labour, reduction in the number of gatemen, and they suggested the devising of ways and means whereby better use of fishplates could be made. With regard to railway workshops, they suggested an amalgamation for the construction of building carriages and believed that they could be concentrated at the Matunga Workshops of the G.I.P. Railway; at the Lilloah Workshops of the E.I.R. for broad gauge carriages and the workshop of the Eastern Bengal Railway for metre gauge stock.

Consequent upon these recommendations, various administrations have undertaken some measures. On the E.I.R. an intensive use of goods engines resulted in a saving of Rs. 38,250 and on the N.W.R. the engine miles per engine day increased from 108 in 1937 to 113 in 1938. On the N.W.R. special measures were devised to decrease the number of hotboxes from 1182 to 918 in 1937-38.

We need not attempt here to make a catalogue of all the economy measures recommended by this Committee nor need we make a detailed investigation into these statistics. What is sought to be demonstrated is that, on their own showing, the Railways can, if they endeavour, effect considerable economies. But this they seem to do only when it affects their revenue receipts. It is, therefore, suggested that these measures should be devised as a conscious mode

31 Report of the Wedgwood Committee, p. 28.

of policy so as to give the benefit of lower freight rates to the general public. It is only by doing so that the railways can keep the traffic to themselves without allowing the road vehicles to draw it away. On the freight side, the competition is not so acute as it is on the passenger side. But that seems to be inevitable unless the railways themselves take to the roads. By virtue of the amendment in 1932 of the Railway Act of 1890 road powers are conferred on the railways; and if the railways could operate their own services within the 50 mile zone, which is the worst affected area, the railways could effectively meet the competition. Another possible method of economy would be the substitution of light diesel rail-cars with low running expenses instead of regular trains. Since these vehicles would have a high load-factor, the receipts therefrom would far exceed the expenses and some measure of the mobility of the road motor could be achieved by introducing more frequent services on the sections whereon competition is keenest.

PASSENGER EARNINGS.

Let us now turn to the question of passenger revenue. There is no gainsaying the fact that, though the railways depend upon goods traffic for the bulk of their earnings, nevertheless, passenger receipts form quite an important source of railway revenue. The statements in the Appendices³² give a statistical survey of the position. The tables give the number of passengers carried in hundreds, the passenger miles in thousands, the average number of miles a passenger was carried and the earnings from passengers in thousands of rupees. It will be seen that passenger receipts show a tendency to observe a fair amount of steadiness till 1929-30. The fluctuation in the receipts from third class passengers, especially, is not marked. In 1928-29, however, receipts under first and second class

32 See Appendix.

Road-Rail Transport

show a perceptible decrease, though intermediate and third class receipts too are likewise. The depression, however, resulted in a sharp decline in earnings, and this was to be found in all classes of passenger traffic. The lowest was reached in 1934-35 when receipts were greatly attenuated. The earnings from first class fell from 1,20,42 in 1925-26 to 76,83 in 1934-35; in the second, there was a similar fall from 1,89,42 to 1,41,48. In the inter class the decrease was from Rs. 1,59,61 to 1,11,92, and for the third class, which forms the bulk of railway earnings, the corresponding figures are Rs. 34,76,54 and 24,04,74. Conditions have since improved and the earnings from the four classes in 1937-38 were Rs. 79,16; 1,44,40; 1,22,17; and 27,62,69. Nevertheless, the 27,62,69 in the third class is much less, compared with the 34,76,54 at the height of business prosperity.³³ While earnings show signs of improvement in all the three classes, the figures relating to the number of passengers carried class by class though on the increase are not very encouraging. In 1925-26, 574,608,100 passengers were carried in the third class alone; in 1933-34 it was 473,585,000 and in 1937-38 it is 505,346,300—improvement of nearly 12 millions over the previous year's figures, but less than the 1925-26 figure by nearly 70 millions!

The average distance travelled by a third class passenger ranged round about 35 miles and shows very negligible variation. But the average lead in the case of the upper classes shows considerable increase. In 1925-26 for the inter class it was 45·8, in 1937-38, it was 50·1. For the same years, the corresponding figures for first and second class have shown an improvement from 107·6 and 38·6 to 212·5 and 78·7. The increase in both cases is nearly 100 per cent. The chief cause of the relative smallness of the figure in the case of the third class passenger is that he is usually one who restricts himself to short distance

³³ Vide Appendix A. 6.

traffic. It is this that explains the heaviness of traffic on metre and broad gauge lines and the consequent high figures for locomotives and passenger carriages under or awaiting repair. Business interests largely necessitate travel. It is the general impression that most of our travel is obligatory or unavoidable, *e.g.*, boys proceeding to or from schools and colleges, lawyers going on Court work etc. Nevertheless, on actual examination, it would be found that this forms only a small percentage of total traffic. Probably, the largest single item or cause is litigation. According to a recent investigation of 10,000 passengers conducted by the Assam Bengal Railway as to the reasons for travel, it was observed that most of them travelled within a range of 25 miles, for purposes of litigation. As the law courts are situated nearby at the district headquarters, there is no need for travelling long distances. Traders and businessmen accounted for about 9 per cent of total traffic, while a good part was due to optional traffic *i.e.*, travel for travel's sake. The statement below gives a tabular representation of this according to zone.³⁴

Zones	Litigants.	Persons seeking employment.	Traders travelling on business.	Obligatory.	Optional.	Total.
Miles.	%	%	%	%	%	%
1-25 ..	25	..	9	5	12	51
26-50 ..	5	1	3	2	6	17
51-150 ..	1	1	4	2	5	13
151-300 ..	..	1	1	1	2	5
Over 300 .	..	4	3	3	4	14
Total ..	31	7	20	13	29	100

The statement of Density of Traffic on Class I Railways³⁵ shows the passenger miles per annum per route

34 Survey conducted by the Assam Bengal Railway.

35 Statement of Density of Traffic; *Vide* Appendix A. 4.

Road-Rail Transport

mile, as well as for track mile. The figures for these show a similar trend as in the case of earnings. The figures are at a minimum in 1934-35 for running track mile, and for route mile, the worst year is the year previous to this.

Since 1926 the Electric Suburban sections have drawn away a large part of passenger traffic that used previously to go to the steam railways. The only three administrations on which we have an Electric Suburban train service are the Great Indian Peninsula Railway, the Bombay Baroda and Central India, and South Indian Railways. The pioneer in this field was the G.I.P. which in 1926-27 had a route mileage of 29.9 and a track mileage of 71.6. The statement of Electric Multiple Unit Suburban Train Statistics³⁶ gives a brief statistical history of the earnings, route mileage, track mileage and costs. The South Indian Railway started electrification of 18.14 miles in 1931, with a track mileage of 36.28, *i.e.*, there was a double line from Tambaram to Madras Beach. It is interesting to note that there has not been the addition of a single mile to this. Let us examine only a few figures relating to the S.I.R. electric system:—

Year.	No. of Passengers.	Earnings.	Passenger miles.	Earnings per passenger mile.	Cost per passenger mile.
1931	3,319,478	4,26,719	28,140,104	2.91	2.02
1932	..	6,72,618	48,358,597	2.68	1.99
1933	7,709,675	6,88,965	49,898,642	2.65	1.67
1934	7,705,336	6,47,981	47,977,098	2.59	1.26
1935	7,123,305	5,79,326	43,696,214	2.55	1.45
1936	7,323,606	5,71,746	46,143,469	2.11	1.71
1937	8,272,477	6,60,548	53,501,314	2.37	1.64

It will be seen that after 1931 there has been a more than doubling in the number of passengers and that in the last year it passed the eight million mark. Earnings too, which fell to 571,746 in 1936, have since improved. The earnings per passenger mile show a steady decrease

36 *Vide* Appendix A. 2.

and figures for cost per mile, which fall till 1934, take an upward movement. The electrification of the section between Tambaram and Madras Beach has drawn traffic to a large extent off the road and has conferred the benefit of a quick and frequent suburban service because of the low costs per mile. The social effects of this have been the almost phenomenal growth in suburbia around Madras. The laying of the electric line resulted in the spreading out of people from Madras city proper and in their settling in places like Saidapet and Mambalam. So beneficial have been the results that even these places are rapidly getting congested so that the process of extension will have to continue. The economic development of these places can be judged from the rise in the value of house-sites from about Rs. 150 to Rs. 700 or 800 in important thoroughfares. If the line were to be extended as far as Chingleput, as it is proposed, it would lead to greater revenue and a higher standard of living. The G.I.P. has the largest electric system in India and is thereby able to provide a very efficient and speedy service between Bombay and Poona. What the G.I.P. Railway has done, surely the South Indian Railway could do, though probably on a smaller scale.

With the increasing competition offered to the railways by the road motor vehicle, the position of passenger traffic on the railways gives grave cause for apprehension. It is common knowledge that the conditions of third class travel are none too good. The difficulties are felt all the keener when long distance journeys have got to be undertaken. Compartments are usually very heavily over-crowded, and on a hot summer's day the difficulties are truly great. Moreover, the sphere of road competition lies within a circuit of 50 miles which is a fairly short distance. In our analysis of passenger travel, we found that nearly 51 per cent of passenger traffic was within a zone of 25 miles. It

Road-Rail Transport

is this particular distance that is most suited for motor competition, and with the alignment of roads exactly parallel to the railway, the competition becomes all the keener. This problem will be investigated into when we come to survey the position of the road motor industry in our economy. Suffice it to say here that the railways have had to reduce their rates to meet those of their competitor. It is a well known fact that the cost basis of motor transport under present conditions is nearly 4.5 pies per mile. This is truly an uneconomic rate which the railways would find it very difficult to meet, since their expenses are very heavy.

Many have been the complaints received about the hardships of third class travel. Passenger traffic, especially on branch lines, leaves a great deal to be desired. There is not a sufficiently frequent train service commensurate with need, and the train connections at junctions are inconvenient. Each railway report prides itself on its achievement of this, that and the other. It is constantly brought to our notice that the railways are doing their best to minimise the evil, and, inspite of their best endeavours, they have failed to achieve it. For example, one has to wait sometimes at Trichinopoly junction for hours on end for a connecting train with either Dindigul or Erode. The worst of it is that some of these connecting trains never run to time so that one misses his connection. The Pollachi-Dindigul line is a good example of this. It is this that is the cause of the roads sweeping off the traffic from the rail. Any day, railway travel is more comfortable than motor bus travel. One has only to get himself sandwiched in a bus seething with humanity on a hot summer's day to appreciate the relative comfort of a railway compartment.

Long distance third class travel needs great attention. There is still no adequate provision of latrines and the few

that are provided are not at all well cared for; either they are too dirty for use, or there is no water. The usual placard displayed in each lavatory is that the passengers can get it cleaned when it is found dirty. But actually from experience, one finds that no one takes the complaint seriously. It may be suggested that at each important station, not necessarily a junction, it should be made obligatory on the part of the station staff to see to the cleanliness of these latrines and the adequacy of water. Furthermore, on a long distance run, say from Madras to Delhi, the compartments get littered up with dust and garbage. Of course, much depends upon personal cleanliness. The passenger must remind himself of the fact that unless he is clean he cannot expect the compartment to be clean. Personal hygiene and a civic sense cannot be wrought over-night like Jack's bean-stalk. It is a process of evolution, and we cannot, therefore, wait till such a happy consummation is brought about voluntarily.

Another feature that calls for some comment is the inadequacy of third class accommodation on the trunk trains. We have just made mention of the inadequate use of rolling stock and to the existence of a large number of passenger vehicles lying unused. In spite of this, the third class bogies on a through train are all too few, so that there is terrible overcrowding.³⁷ A recent demand that has been gaining in intensity is the need for installing electric fans in third class carriages. The need for this is not so immediate as it is made to appear. There are far greater and imminent needs that have to be attended to.

The Wedgwood Committee, in its recommendations and investigations, found that first and second class carriages, especially on branch lines, were running mostly empty and

· 37 *Vide* speeches of members in the Legislative Assembly and Council of State.

Road-Rail Transport

that there was no need for a plurality of classes and that an upper and a lower class would suit India's requirements. In 1935-36, there were 96,281 first and second class seats as against 90,982 in 1926-27, thus registering an increase in accommodation by 6 per cent. On the other hand, the earnings from these showed considerable diminution. Earnings in 1935-36 fell from Rs. 2,97,27,000 to Rs. 2,17,51,000, or by 27 per cent, and the fall in the number of persons carried was 53 per cent. When there was such a heavy fall in earnings as well as in numbers there was no point in increasing the accommodation. Instead of hauling an upper class compartment empty, it would be much more advisable if a third class bogie were attached, incidentally easing the congestion in the lower classes. The situation is especially very bad on the branch lines where there is little or no upper class travel. The second class compartment is almost always empty. That there are usually no first class bogies attached is matter for some congratulation. India is a land of poor people who cannot afford the luxuries of upper class travel. In the teeth of this unassailable truth, it is rather strange that the State Railways should introduce the air-conditioned cars on the line. These have been introduced on the Frontier Mail of the Bombay Baroda and Central India Service, between Bombay and Calcutta, and between Delhi and Calcutta. One doubts the wisdom of this experiment, though the Railway Board feel quite optimistic and say that "the results obtained by the end of the year under review indicate that the outlay incurred on these air-conditioned coaches will be amply justified." It is, however, felt that, if only these moneys could be spent on the provision of refrigerator trucks for the carriage of perishable freight, it would be a better investment. This would not only increase railway revenues but also provide a much needed want to the public. The chief point of criticism that could be levelled against air-conditioned first class carriages is that when upper class

travel itself is so rare and earnings therefrom are low, there is no useful purpose served by imposing another class at a much higher rate.

There is one other important thing that must be said about third class traffic and that is about ticketless travel. There seems to be quite a large volume of such improper use of railway facilities. The bulk of such people are vagrants who brave the risks of being caught, and undaunted, do the journey by stages. The root cause for this is economic. With the increasing growth of poverty among the low classes, all means of begging seem to be justifiable and the beggar problem on trains is becoming a nuisance. Not only do such persons rob the railway of its legitimate earnings but also are regular pests to the travellers. The problem of begging on trains is specially great on shuttle services where it is convenient for these vagrants to go about for short distances. Apart from the impecunious wretches that have to eke out their subsistence by hook or crook, there is also some unauthorised travel by persons who could well afford to pay their fares. This type of travel, though general, is probably to be seen in its intensity in very short distances, say two or three stations beyond the place of boarding. No amount of checking would eradicate this evil until and unless passengers are alive to their sense of responsibility and the railway employees subordinate other interests to the rightful duties of loyalty. Time and again, the various administrations have rigorously tightened up their regulations.

The South Indian Railway since 1937 have divided up their entire system into thirty-three sections under the supervision of six squads of four ticket examiners. During festival-time, an additional complement of five members of the crew was drawn upon. Similar arrangements have been undertaken on all railways. "Flying squads" have become common on all these, and the Great Indian

Road-Rail Transport

Peninsula Railway have appointed Railway Magistrates at Katni, Jhansi and Agra to dispose of cases relating to illicit travel as quickly as possible. In spite of these regulations, the evil does not seem to have been exterminated, and the following figures for the different administrations will bear this out:—³⁸

1937-38.

Railway.	No. of passengers.	Amount due.
		Rs.
Assam-Bengal ..	53,398	60,078
Bengal & North-Western ..	321,917	2,17,571
Bengal-Nagpur ..	185,341	2,61,127*
B. B. & C. I. ..	789,725	5,18,591
East Indian ..	274,000	4,26,000
Great Indian Peninsula ..	243,988	2,20,748
Jodhpur ..	32,888	34,992
M. & S. M. ..	164,476	1,28,348
The N. S. S. R. ..	10,857	12,614
North Western ..	376,103	4,46,705
Rohilkund & Kumaon ..	44,980	40,008
South Indian ..	140,220	1,27,053*
Eastern Bengal ..	230,966	1,97,159

* Amounts actually recovered.

This danger seems, therefore, to be an incipient one. The best way to stop this is to effectively undertake checking at all important centres and to conduct surprise checkings. Checking should be specially concentrated at such places where this method of travel is most frequent and where, and when, traffic is heaviest as at 'jatras', 'melas' or festivals. Checking of round-tour tickets must be effectively done. The railways have now introduced what are

³⁸ Railway Board Report 1937-38, p. 56.

called round-tour tickets at attractive rates amounting to $1\frac{1}{2}$ ordinary third class fares covering specified routes to attract traffic. These tickets have become very popular since they are much cheaper and the option of breaking journey is left to the discretion of the passenger. More than anything else, the life of the ticket is very long viz. 3 months. The instruction on the ticket to the checking staff is that they should initial in the blank space provided and date it. At stations where the passenger breaks his journey the station master or the official concerned has got to make an entry there. These rules are observed in the breach. Of course, there does not seem to be much misuse of these privileged tickets necessitating extra caution. It is only mentioned to show how dilatory and unbusinesslike the crew could be.

BRANCH LINES.

Branch line policy has in recent years assumed a great deal of importance, more on account of the unremunerativeness of many of them. By its very nature, the policy to be pursued in the matter of administering such a line should differ from that followed in the case of main lines. A branch line, as would be evident even to the uninitiated in transport economics, cannot but expect to have light traffic and to earn considerably less than the main line. Usually a new line is laid connecting up with a branch line so as to tap the resources of the area served and to draw traffic therefrom. In this connection there seems to be a fallacious sort of reasoning that must be put down. It is commonly said that such lines should be constructed in poor agricultural areas because, as they are cheaply built and need less capital expenditure, they could charge rates on a cheaper basis and thus give the district the benefit of an adequate service. On the other hand, the very fact that some artificial stimulus is needed for the construction of this line implies that the traffic can only be expected to be light and that the incidence of this capital charge, compared

Road-Rail Transport

to the main lines, would be greater, since the volume of traffic is much less than in the former. Sir William Acworth sums up the situation thus:—

“Two practical conclusions from the above may be noted here. If it is necessary for a light railway to be built independently, it ought to be permitted to charge rates and fares very much in excess of those which would be reasonable on main lines. Secondly, the proper people to build light lines are the main-line companies with which the light ones connect, for they obtain from the construction of a new branch an accession of new traffic which, while contributing to the remuneration of the old main-line capital, does not as a rule imply any expenditure on that line of new capital for its accommodation.”³⁹

In some cases it is not strange to find that branches have been built, which, though not expected to be financially sound, are intended to raise the value of lands adjoining the lines. This is mostly the result of the “money power” in politics. Certainly, on principle, such a policy is to be condemned. The financial aspect of the project must be thoroughly gone through, before any expenditure is incurred. The onus of proving its necessity lies on those who demand its construction. Nevertheless, if one were to go through the railway histories of foreign countries, he would find a number of curious, yet interesting, examples. The most striking feature of the railway system of South Africa is the number of dead end lines. It would appear that when the South African Government carried out irrigation projects, the people of the areas served thus clamoured for branch lines to be built so as to enhance the value of their lands and produce. True, it is the enhancement of economic values that is the avowed end of railway construction. But, there is neither rhyme nor

³⁹ Sir William Acworth: *Elements of Railway Economics*, Footnote p. 20.

reason in such construction being carried out even when it is doubted whether the produce resulting from the irrigation justifies the undertaking of these costs. The Legislature had to yield to the superior force of public opinion, and to placate it, built lines so light that when some really heavy traffic developed, the line could not handle it because of the thoughtless way in which it was constructed.⁴⁰ One, therefore, hardly need stress the necessity for circumspection. The probable gains resulting to the community will have to be first estimated, as also the cost of working the line. In judging the value of these gains, Mr. Jagtiani⁴¹ says, it is not the total gains that would accrue, but the difference between this and what the return would be, if expended on some other enterprise. He says: "The gains of the community are not the totality of the return on the new enterprise which has been made possible by the transport services. That would be so only if it were assumed that the capital and labour employed in that enterprise would have remained idle. But, in fact, what is really done is that better employment for both is found than before. The inherent benefits, therefore, consist only in the difference existing between and after a railway has been built, and not in the totality of their remuneration." This is assuredly the correct point of view, but to say that the gains to the community should not be accredited *in toto* to the railways, is, I believe, a misrepresentation of fact. In business, we judge the potentialities of a particular enterprise from the probable returns it would make. In doing so, the return is always taken in its entirety, though, in making the initial investment, no doubt, the probable gains from other modes of investment will have to be investigated. The law of competitive wants does play a very important part in investment, but once it

40 *Vide* Frankel: *Railway Policy in S. Africa*, p. 122.

41 H. M. Jagtiani: *Role of the State in the provision of Railways*.

Road-Rail Transport

is made, it ceases to play any further part. For example, a financier may be just in doubt as to whether he should launch upon building a cotton mill or a jute mill. He will have to decide which would be more paying and come to some definite course of action. Supposing he were to view that the cotton mill was more paying, then he would build it and thereafter, whatever he gets in the shape of returns, is entirely due to the cotton mill; the jute mill would cease to influence him, since every pie of his earnings is due to that particular mode of investment that he has decided upon. It would be wrong to say that his gain is really the difference between the returns from the two investments. If, however, he had already built the Jute Mill and then sold it off or scrapped it to invest it in a cotton mill, then probably, the other form of investment will play its part. Even then, it would be useful in arriving at, not his gains, but his net gains. Thus what Mr. Jagtiani says would refer correctly to the net benefit of the community, and not its gains.

Because of the doubtful financial returns of branch lines, private enterprise failed to look at it with favour in the early days of branch line construction in India, so that the Government had to invite capital on a rupee basis and to grant several concessions such as the free grant of land and the conduct of surveys gratis by the Government itself. In addition, rolling stock supply and the administration of the lines were to be undertaken by the parent line which would grant a limited rebate from its earnings so as to ensure a 4 per cent return on the capital invested in the branch line.⁴² These were the earliest proposals laid down in 1893, which had to be subsequently modified. The Government reserved to itself the right of purchase at the end of 22 years, on payment of 25 times the average net yearly-earnings for the preceding five years, “ provided

42 Sanyal: History of Indian Railways, p. 157.

the price would not be below par and would not exceed capital expenditure by more than 20 per cent. At the end of 50 years, the actual capital expenditure alone was to be paid.”⁴³ There was a slight change in the rate of dividend and payment of earnings introduced in 1895. Subsequent alterations were effected in 1910 and 1914. It now came to be accepted that in the matter of constructing these lines, the main line should have precedence over others, since it would act as a feeder to it and thus be able to get the advantage of traffic interchanged from the light railway. This view was concurred in by the Mackay Committee. Earlier in 1903, Mr. Thomas Robertson who was appointed to study this question, opined that whereas the main lines should be given first preference, the guaranteed interest should be raised to 4 per cent and that there should be a slight easing in the Governmental control over these lines.⁴⁴ The 1910 revision of the rules consisted in limiting the rate of dividend guaranteed by the State to 3½ per cent, and this guarantee was to be in force till such time as the Government purchased it.

The Acworth Committee of 1921 appointed to investigate into our railway problem naively summed up their views thus: “The Branch Line Company is usually a fifth wheel to the coach. It implies in some cases a separate construction staff; it always implies a separate Board of Directors. In cases where the Branch is worked by the main line, if its Directors feel that the management is unsatisfactory, they not only can make representations to the main line administration, but in the last resort can appeal to the Railway Board. And this does not make for harmony. It is, further, evident that capital raised by a small private undertaking, even with a

43 N. Sanyal: *Development of Indian Railways*, p. 158.

44 Thomas Robertson's Report on Indian Railway Administration, 1903.

Road-Rail Transport

Government guarantee, will cost more than money raised directly by the State. As against this, a certain weight must in fairness be attached to the claim that the Branch Line Company obtains from local sources money that would never be subscribed to a Government loan. There may also be certain cases of a branch line of smaller gauge worked independently, where the Branch Line Company can operate more economically than is possible to a main line." ⁴⁵ The Committee found itself in agreement with the prevalent view that where the need for them was definitely felt, branch lines should be constructed and that priority should be given to the main line. The State could itself undertake to construct them or, as in Madras, allow the District Boards to do so. In the absence of these, private enterprise should be encouraged, but the end to be kept in view is the restriction in the number of companies that operate them. Amalgamation and not diversification should be achieved.

Branch line policy has taken a different turn since the beginning of the era of motor transportation. The bulk of railway receipts is from passenger earnings. In 1937-38 the earnings from third class passengers alone amounted to Rs. 27,62,69,000. Most of this traffic is short distance. It has been shown elsewhere in this chapter that the bulk of the traffic is within a radius of fifty miles. The figures for the average distance a third class passenger was carried for various years has ranged round about 35 miles, which can be accepted as fairly approximate. Unfortunately, however, this is just the range within which the motor vehicles are most effective. These operate within a range of fifty miles, and being speedy are able to draw the cream of traffic off the line. As it is, the motor vehicles have specialised in passenger transport, in which sphere the competition is very keen. Consequent upon

45 Acworth Committee Report, p. 57.

this, the earnings of the branch lines have fallen considerably, constituting a grave problem to the railways. Viewing the whole question dispassionately, it is felt that where good roads exist, the motor has a definite advantage over the railway, and it would be folly to construct a line where a motor bus could most conveniently ply. The extent of this competition can be seen from the fact that the South Indian Railway was forced to lower its fares so as to meet the special conditions that had arisen. The following are a few of the reduced rates:—

		RS.	AS.	PS.	Distance.
Trichinopoly-Dindigul	..	0	10	6	58
Dindigul-Madura	..	0	7	0	38
Punalur-Trivandrum	..	0	12	6	68
Madura-Bodinayakanur	..	0	14	0	56
Tiruppattur-Krishnagiri	..	0	5	6	26
Tiruvennamalai-Vellore	..	0	10	0	52
Dindigul-Palni	..	0	6	6	37
Tanjore-Kumbakonam	..	0	4	3	24
Trichy Palakarai-Karur	..	0	8	0	45
Coimbatore-Palghat	..	0	7	0	34

Nevertheless, it does not always follow that where motor vehicles operate, no branch line should be laid or operate since, notwithstanding the bus, there may be heavy freight traffic offering to the railways as is the case on the Dindigul-Pollachi section. More often, a branch line may be needed to connect two sections on the main line. It would thus make for through connections and serve a great purpose. Generally, however, as the Mitchell-Kirkness Report says, “in these provinces where good roads can be constructed and maintained, the justification of a branch line must rest largely on the amount of merchandise which it will be required to carry and which could in no circumstances be carried economically by road.”⁴⁶

46 Mitchell-Kirkness Report, p. 56.

Road-Rail Transport

This Committee, which was set to investigate into the existing state of road-rail competition in India, made a thorough study of the proposed schemes for branch line construction, as also of those in existence. It classified the projects into six categories as (1) those that could be abandoned in favour of good roads, (2) those which probably cannot be justified owing to the existence of good roads, (3) projects probably justified by traffic offering especially heavy merchandise even where good roads exist, (4) those that may be required urgently as through connections, (5) projects which may be required as through connections and (6) those which can be abandoned for various reasons. The Committee investigated into the proposals of all the railways. In the Madras Presidency, the South Indian Railway came up for a good deal of consideration. The Panakkudi-Palamecottah and Ariyalur Jayancondacholapuram were brought under the first category *i.e.*, those that may be abandoned in favour of good roads. Under the second category, were placed six lines making a total route mileage of 150. Five lines were considered as justified in view of the heavy traffic offering. They were the following Metre Gauge lines:—

Pollachi-Vennathurai	—	15 miles.
Bodinayakanur-Gudalur	—	28 „
Karaikudi-Madura-Palni	—	51 „
Tiruppur-Satyamangalam	—	94 „
Tanjore-Pattukottai	—	28 „

The Arantangi-Karaikudi; Manamadura-Maniyachi—Tuticorin; and Satyamangalam-Hardanhalli lines were considered necessary for through connection. With regard to the M. & S. M. Railway serving this Presidency, 264 miles of railway, constituting four branch lines were considered fit to be abandoned in favour of good roads, while two lines *viz.* Madras—Renigunta and Cumbum-Kalahasti—Madras were considered necessary for through connections.

The Madras section of the Committee that investigated into this question in relation to the needs of the Presidency concurred with the views and conclusions of the Committee, but felt that the question of Palamcottah-Panakkudi and Ariyalur-Jayancondacholapuram should be re-examined. The former is required to develop the Cochin harbour and to tap the rich resources of the stretch of country it is expected to traverse. As for the second, it was felt that a road would not be adequate. The Madras Committee, however, expressed itself very emphatically in favour of a line from Satyamangalam to Palni *via* Dharapuram and Tiruppur. The direct route is 94 miles, while the Kanga-yam route would be 110. The line would connect two important areas, the value of which would be enhanced by the proposed damming of the Bhavani at Satyamangalam. The views of the Committee are worth quoting:—“ We understand that the local Government are anxious that the portion of this project between Tiruppur and Satyamangalam should be constructed because they are contemplating damming the river Bhavani in the neighbourhood of the latter place, and a railway will be necessary to assist in this work, as was necessary in connection with the Mettur Project. Tiruppur is served by the South Indian Railway broad gauge main line and, to avoid transshipment at this point, the part of the line required by the Madras Government would have to be broad gauge. If the Bhavani dam is to be constructed, it would appear that a road would not serve the purpose of this railway, at any rate between Tiruppur and Satyamangalam.”⁴⁷ Besides this line, the Arantangi-Karaikudi, and Manamadura-Tuticorin Railways were considered necessary.

These proposals, sound as they are, do not seem possible at present in view of the financial difficulties and the disturbed political conditions. None the less, even when

47 Mitchell-Kirkness Report, Madras Section, p. 25.

Road-Rail Transport

they are to be undertaken, the financial prospects of the scheme should be studied in its entirety before expenditure is launched upon them. As the Salter Report on Road and Rail transport remarks, "instead of preserving a poorly used, badly managed and dreary branch line, we shall be able to scrap it with no loss of dignity and to substitute road transport not in the midst of competitive rejoicings at a road transport victory but as an action dictated by good sense."

THE FEDERAL RAILWAY AUTHORITY.

All these matters pertaining to the administrative and the financial working of the Railways will, under the new Federation, come under the province of the Federal Railway Authority. It will be the duty of this body to make due provision for the payment of working expenses and to keep up the contracts with the railway undertakings. It should also make provision for the maintenance, renewals and depreciation and payments of interest to the Federation in respect of the capital subscribed by it. Pensions and Provident Funds will have to be met and the Authority shall defray all other expenses chargeable against revenue in that year.

The Railway Authority is to be conducted on the strictest business principles and should maintain its financial stability. In the matter of additional capital, this body should raise such capital on its own account. Ability to issue capital at a reasonable rate should be a crucial test of the credit of the Authority and will be useful in preserving a high standard of efficiency. If the Authority is unable to do so, it will have to approach Government for necessary aid. As the Government would be held responsible for the payment of interest on the capital so raised, it would necessarily have power to scrutinise the manner in which these moneys are expended and exert its complete check through the Audit Department.

The Authority will maintain a Railway Fund into which all moneys received would be paid, and out of which all expenses would be defrayed. The Authority is obliged to pay the interest charges to Government, and, as the Wedgwood Committee say, the Authority must on no account fail to pay these. Out of the net revenue balances accruing in good years, a reserve fund will be constituted, and the Committee suggested that the Authority should be empowered to fall back on its Depreciation Fund in case its reserve funds were to get depleted. If, inspite of all this, the Railway Authority were still unable to meet its commitments, the Government would have the power to appoint a receiver for the railway undertaking as a whole, *i.e.*, to take over the management itself.⁴⁸ In any case, the payment of interest to the Government would constitute a first charge, and in order to minimise the uncertainties arising from a variable rate of interest, it was felt by the Committee that a reasonable rate should be fixed.

The Government of India Act of 1935 enjoins that the Authority shall act on business principles and pay due regard to the interests of agriculture, industry, commerce and the general public. In the discharge of their duties they may, from time to time, be instructed by the Federal Government as to the policy to be adopted. Where, however, a dispute should arise between the Federal Authority and the Federal Government as to what constitutes a question of policy, the decision of the Governor-General would be final. The Governor-General has the power to appoint not less than three-sevenths of the Authority and one of the members will be appointed President by the Governor-General in his discretion.

The technical management of the railways should be left to the Railway Board. The Chief Commissioner for

⁴⁸ Indian Railway Enquiry Committee Report 1937, p. 131,

Road-Rail Transport

Railways would represent the apex of the administration and would be a person of considerable railway experience and shall be appointed by the Governor-General. This Chief Commissioner will be assisted in the execution of his duties by a Financial Commissioner appointed by the Federal Government, and such other Commissioners as the Authority, on the recommendation of the Chief Commissioner, may appoint. The Chief and Financial Commissioners, though not members of the Federal Authority, will, nevertheless, have the right to attend its meetings. Thus, the Railway Board would have very considerable powers delegated to it and would in fact be the chief bulwark of the administration. A Railway Rates Advisory Committee consisting of three members,—the President being a Federal Court Judge and two others, all of whom shall be men of considerable experience, will be the final authority in deciding all disputes in the matter of rates, discrimination, etc. An appeal from the Tribunal shall lie in the Federal Court. The Authority to be so constituted will thus have very considerable powers and it should lie in it to conduct the administration with the single eye to efficiency and economy.

CHAPTER VI

THE PROBLEM OF INCREASED EARNINGS

THE problem of better railway management with a view to increased profits has to be attacked both ways: from the expenditure and the income side. We have now seen how expenditure could be retrenched, and may now turn to measures intended to increase earnings. This task should legitimately belong to the Commercial Departments of the Railways since it lies within their province. The Wedgwood Committee was sorry to note that the Commercial Departments did not come into live contact with the business community. (What is needed is closer co-operation between the railways and the public.) As Mr. Farrar says, it does not matter whether it is transport or toffee that is offered for sale; the same law applies. To do this what is needed is field investigation. A research department has got to be the necessary complement of every railway administration. This would not be a difficult task since there are any number of young university men of great push and intelligence whose services could be easily obtained. It should not be mere desk work that is assigned to them, but they must be set to visit important commercial centres, meet the businessmen, investigate into their cases and study what exactly is required of them. Nor should they restrict themselves to towns. Ours is largely a rural economy and the bulk of the population relies upon agriculture for its support. Nevertheless, we are just now on the threshold of a new phase in industrial development. The tendency, therefore, is for the industries to spread out into the rural areas so as to be near the source of raw materials. The research workers will, therefore, have to go out into the villages and see what could be done to increase the popularity of the railways. For all this, the railways must be prepared to spend.) There cannot be income without expenditure and one reason for the niggardliness

Road-Rail Transport

of railway expenditure on such projects is the unhealthy belief that railway expenditure should be kept at a minimum. "The primary business of a railway is not to spend money nor even to save money, but to earn it; and as a means to earning money, it must be free to spend it." Thus you must not be too wary in launching upon such schemes. Nor must it be expected that such expenditure would immediately lead to increased receipts. It may reflect itself in diminished losses at first, as some time may be needed before the benefits of such expenditure could be felt.

Inter-railway competition can be minimised by some system of traffic pooling whereby each railway is set apart a separate sphere of influence. This device has been in existence for long and has the merit of conserving the revenues of the participating concerns. Another plan would be either to agree that each will handle only a certain percentage of all tonnage or to share a definite proportion of the earnings therefrom. The former method is possible only when the lines of the particular railways lie in well defined geographical divisions. Dagget cites the Cattle Pool of 1875 as an example of the latter.¹ It would appear that, prior to 1875, the rates on cattle from New York to Chicago were varying and discriminatory in character. It was, therefore, decided to distribute traffic so as to give each line a fair share of it. But the chief ground of complaint against pools is that they make unreasonable rates possible. Therefore, the American Act of 1887 decreed that it would be unlawful for any carrier to enter into any combination with others either to pool the traffic of competing rail-roads or to divide between themselves the proceeds thereof upon any agreed basis. However, there was a change in policy under the Act of 1920 whereby pools were legitimised by the Inter-State

1 *Vide Principles of Inland Transportation*, p. 500.

The Problem of Increased Earnings

Commerce Commission. This was necessitated by the change in emphasis from competition to co-ordination. The English Act of 1921, however, looks askance at pools. The relevant section of that Act lays down that "it shall not be lawful for any constituent . . . or amalgamated company, without the consent of the Minister, to enter into an agreement with any other amalgamated company for the amalgamation of traffic or the pooling of receipts, or otherwise, for effecting a combination which would contravene the purpose of this Act."²

Another important item that needs increase is passenger receipts. Passenger earnings account for nearly a third of total receipts. In 1937-39 out of a total receipt of Rs. 96,45 lakhs on the state-owned lines, passenger receipts were equal to Rs. 27,90 lakhs. This shows how large passenger earnings loom in railway income. Every endeavour should, therefore, be made to maximise this. With the increasing severity of road competition this constitutes a very difficult problem, calling for urgent solution. Extensive publicity is a requisite, and more important than this is the provisions of amenities to passengers. One need not recall the sordid days when pilgrims were carried in open wagons during the "mela rush." The grossly iniquitous conditions of third class travel have been the subject of comment by every committee on Indian Railways. As early as 1903 Mr. Thomas Robertson³ emphasised the need for the provision of greater facilities for the third class passengers and his views were reiterated by the Acworth Committee. These have been discussed already.

The Wedgwood Committee too drew attention to the importance of expenditure on such fundamental necessities. The railways, it must be said to their credit, have now realised the importance of this and have devised measures

² The English Railways Act 1921.

³ Thomas Robertson's Report, p. 58.

Road-Rail Transport

to improve them. As an example of these we have the efforts made to handle the traffic at the Kumbh Mela at Hardwar. Some idea of the extent of the problem can be had when it is remembered that a total of 12 lakhs of passengers were handled of which there were 68,000 on the peak day. Forty four special trains brought in the traffic, while 43 trains were filled on a single day with outward traffic.

There has been an increasing provision of facilities such as better and more comfortable coaches, more adequate water supply, waiting room and other facilities. Some idea can be had of this from the proposed expenses under the following heads for 1939-40.

Improvement of latrines and other			
sanitary arrangements	..	Rs.	191 thousands
Water supply for passengers	..	"	126 "
Waiting rooms ..	..	"	213 "
Covered platforms	..	"	384 "
Catering facilities	..	"	102 "
Booking facilities	..	"	41 "
Raised platforms	..	"	171 "
Additional carriages to reduce over-			
crowding ..	..	"	204 "
Improvements in existing carriages.		"	2,267 "
Miscellaneous ..	..	"	190 "
<hr/>			
Total ..		"	3,889 "
<hr/>			

A very novel suggestion has been put forward by Mr. M. F. Farrar⁴ to increase passenger earnings. How far it would be pragmatic is a different question, but its novelty and boldness is arrestive. He starts off with the assertion that the main item of a transport industry is the cost of its permanent way and that this cost remains practically the same whether a lakh of passengers are carried or a hundred lakhs. With every increase in the intensity of traffic, the

4 *Vide* "How to make the British Railways pay."

The Problem of Increased Earnings

cost per passenger journey is reduced. It would thus be in the interests of the railway to reduce this by drawing all the passenger traffic to itself. As the Railway Member in introducing his budget for 1939-40 said, the railways are out to sell transport and it must do so effectively if it is to increase its clientele. It would thus be best to increase this and to divide the standing charges between them and then to add to this the running cost for the distance travelled. His example is worth citing:

“ Let us take as an illustration the L. & N.E.R. Company. Of this Company's £370 millions capital, £250 millions represents the investment on permanent way. The interest required to cover the amount at 5 per cent is £12,500,000. This standing charge remains the same whether any use is made of the track or not. Of this amount £6,000,000 should be charged to passenger traffic and £6,500,000 to goods traffic. Let us deal first with the passenger side of the business. The L.N.E.R. can draw upon a population of roughly 12,000,000 in greater London and approximately 16,000,000 in the other parts of the country served by its lines. Now I think it is reasonable to assume that 2 million people out of the 28 millions use the L.N.E.R. fairly regularly. It would, then, be a sound policy to divide the standing charges of the passenger portion of the track between these two million passengers. The standing charge to the individual passenger would work out at £3. To this should be added the cost of running the passenger over the track—that is, the actual cost of transportation—which would probably be covered by a charge of $\frac{3}{4}$ d. and $\frac{1}{2}$ d. per mile on first and third class travel respectively.⁵

Now, if track contracts of the value of £3 were sold to the two million regular users of the railway, then the whole of the standing charges would be met. In addition to this,

5 *Vide* “How to make the British Railways pay”, p. 45.

Road-Rail Transport

each passenger may be expected to pay £6 annually for actual travel on the basis of a rate of $\frac{3}{4}$ or $\frac{1}{2}$ d. This would mean an additional income of £12 millions. If, however, track contracts were sold at, say, £5 they would be very popular and would result in increased earnings from a large body of select regular travellers. In addition, the receipts from the non-contract passengers *i.e.*, ordinary passengers, income from season and concession tickets, etc., all would go to swell the revenue."

The scheme looks quite Utopian. At the same time it is quite attractive. What needs explanation is the restriction of the number that is to share the standing charges to 2 millions. It has been admitted that all passengers use the track and thus contribute to its wear and tear. Why then should only these two million regular users be singled out for sharing the standing charges? If, as it ought to be, the number to divide the charge were not this but the actual number of passengers, the share per passenger would be less. But then it is not all of these that are constant users of the track, but only the 2 million so that, if a charge of £3 were made per head, then the total standing charges would be met. A concession is shown in lowering the price of the track-contract from its actual cost so as to stimulate traffic.

The adoption of this system would lead to a great simplification in rates and to an increase in revenue. It should be the sovereign end of transport undertakings to lower the cost of transport to the person who uses it most. The adoption of the flat rate would penalise the long distance constant user of railways. The track-contract by lowering his transport bill would induce greater travel and thus bring in larger revenues. Motor bus competition would be eliminated since a long distance railway travel would now be cheaper. Nevertheless, within the short distances, the motor vehicle, by virtue of its flexibility, would reign

The Problem of Increased Earnings

supreme. Thus the respective spheres of influence of the two modes of transport would be clearly defined and co-ordination between them effected. This would lead to simplicity in rate making and also to an increase in the number of passengers travelling regularly and in the distance travelled. The latter is inevitable, since the greater the distance the less would be the cost of traffic per journey. Thus on paper, the scheme appears most tempting. How far it would be practical is left to the railway undertakings to prove.

Ours is an age of speed so that the old-world steam locomotive looks odd. Our trains are slow. No train has come up for so much heated discussion in any parliament as the Grand Trunk Express which takes clean 50 hours to bridge a distance of 1,361 miles! On branch lines, the speed is very low so that there is much scope for speeding up passenger services. It can be done by diminishing the number of stops and the time for watering engines, etc. But the best way of attacking the problem is by electrification. Unfortunately in India, there are only three electrified systems, making up a total route mileage of 98·93. The advantages of electricity over steam need no elucidation. Firstly, it is much speedier. A steam engine takes two to three hours to get up steam and then much loss of time is entailed in slowing down and gaining speed. This apart, the time spent in cleaning fires, drawing off coal and taking in water supplies for the boilers represent 20 per cent of the total time. Electricity would economize space since there would be no coal to be stocked. Above all it is cleaner, speedier and cheaper. The statement of Electric Multiple Unit Suburban Train Statistics in the Appendix gives the relevant data for these. It will be seen from it that on the S.I.R. the average earnings per passenger mile in 1937 was 2·37 pies as against an average cost of 1·64.*

* *Vide* Appendix A. 2.

Road-Rail Transport

Electrification, besides making for speed and efficiency which are the cardinal virtues of suburban transport, leads to more economical operation. Needless to say, electrification of a particular line results in increased capital outlay and to that extent is more costly than steam railways. Taking the Great Indian Peninsula Suburban Electric system, the percentage of net savings on net outlay in 1930-31 was 4.8 and in 1931-32 it was 5.37 as against 6.26 per cent and 8.28 per cent on the B. B. & C. I. Mr. J. C. Nixon in his report on the financial aspects of electrification schemes made a thorough investigation of the comparative economy under both systems for the two railways that serve the suburbia of Bombay. His conclusion, based on the following facts and figures pertaining to the G.I.P. only, is in favour of electrification. The figures are for the year 1930-31:

ANALYSIS OF COSTS OF STEAM WORKING.

Items of cost.	Amounts as worked out entirely on the basis of consult- ing Engineer's figures.	Amounts as worked out independently by the admini- stration.
1	2 Lakhs of Rs.	3 Lakhs of Rs.
1. Fuel	58.74	52.00
2. Running Expenses ..	28.17	33.26
3. Locomotive Repairs ..	19.42	21.72
4. Cleaning and repairs of coaches	6.63	5.17
5. Special Ghat Charges ..	5.40	4.23
	<hr/> 118.36	<hr/> 116.38

These figures relate to the costs incurred under steam working. For the section operated by the G.I.P. Electric Suburban Service, the estimated cost of operation as per the estimate of the G.I.P. Railway is 116.38 lakhs which is less than that of the Consulting Engineer by nearly two lakhs of rupees. The difference in cost is partly due to the lesser cost of fuel consumed in the electrified area. Under

The Problem of Increased Earnings

these circumstances, the Railway Audit Department was inclined to accept the figures of the Administration in preference to those of the Consulting Engineer. As against these, the actual costs of running the electrified system during the year under review, including the extra administrative costs due to electrification and excluding the depreciation appropriation for the two years 1930-31 and 1931-32 were as follows:—

(IN LAKHS OF RUPEES).

Year.	Admini- stration.	Repairs & Main- tenance.	Operation.	Adjust- ment.	Total.
1930-31	1.93	13.10	52.33	5.49	72.85
1931-32	1.50	14.35	49.54	1.44	66.83

Comparing the working expenses under steam and electricity for the first year, a net saving of Rs. 43.53 lakhs is noticeable. This represents nearly 30 per cent of the cost under steam. As against this, the depreciation on the capital outlay of Rs. 942.65 lakhs should be placed at Rs. 23.82 representing 2.5 per cent on the capital outlay. If this were included, the net saving would amount to Rs. 19.72 lakhs, which is 4.8 per cent of the net outlay. Similarly, if the comparative costs of the B. B. & C. I. Railway were looked into, the net return on the capital would be 6.26 per cent.

Calculating on the same basis, the working of the two railways for the years 1930-35 will be seen as follows:—

	G. I. P.		B. B. & C. I.*	
	Traffic in train miles. Lakhs.	Per cent of net savings on net outlay.	Traffic in train miles. (Lakhs).	Per cent of net savings on net outlay.
Estimate.	55.40	10.51	16.60	16.93
1930-31	42.50	4.80	14.28	10.35
1931-32	41.87	5.37	13.43	10.96
1932-33	41.21	5.23	12.56	11.62
1933-34	41.85	4.90	14.00	13.43
1934-35	41.80	4.42	14.07	15.54

*. *Vide* Report of the Public Accounts Committee on the Accounts of 1931-32, pp. 63-72.

Road-Rail Transport

These figures argue for electrification of services, but the question should be asked whether it would be possible to undertake any extensive system of electrification. The costs would be prohibitive and the sphere of operation would necessarily be small. Electrification can be undertaken only in the case of metropolitan traffic which would be heavy especially during the rush hours. Elsewhere it is not likely to be feasible. Steam will continue to be our main driving agent.

With regard to Goods traffic also, there is much scope for improvement. Here, what is most essential is a sufficient load factor. The greater the load factor the less is the cost per ton mile. Every measure should, therefore, be taken to increase receipts under this head. A plan similar to the one suggested for increasing passenger revenue is needed. The idea should be to maximise demand for traffic. Such a system should be devised as would be not only cheap but also simple. For this purpose all the important firms in a locality should be made to send their goods by rail. The traffic that each firm offers should be noted and specially favourable rates should be quoted for them. Mr. Farrar would go further and propose a like plan for goods traffic. He would suggest the introduction of a record card whereon details pertaining to each consignment of a firm would be made and at the end of the year all that would be reduced to goods-ton-miles. Every month, he says, the total number of goods-ton-miles on the whole of the Company's system would be divided into the proportion of the standard revenue allocated to goods traffic which would give the cost per goods-ton-mile.

The Research Section to be attached to the Commercial Department should make a detailed study of freight rates in relation to incidence and thus gauge the justifiability of the rate charged. The method to be adopted should be to study the economics of each industry and to make a

The Problem of Increased Earnings

detailed investigation into their costs of operation. Thereafter, the ratio of the freight charged for various distances should be calculated and the regressiveness or justifiability of the rates determined. The Commercial Superintendent must ever be ready to pay a patient hearing to the various complaints that come before him and he should make a dispassionate investigation into them. In doing so, not only should the present position be considered, but also, the future prospects that they hold. The idea should be to foster economic development instead of merely maximising profits. This cannot be expected of private managed lines which obviously work on a profit basis. Therefore, for an even and steady development of our economic fabric what is necessary is railway nationalisation.

A rigid rate structure should never be the end aimed at. 'Railways are out to sell transport and, if you want to sell your goods particularly in competitive conditions, you must satisfy your customer. The public is your customer.'⁶ This could be done only by a reasonable rate structure. Freight earnings cannot be increased either by a general rate increase or by a lowering of rates. In the section on rates and fares we have noted our opinion against the present rate increase. During the last war there was a similar increase through surtaxes which were strongly condemned in set terms by the Acworth Committee. Though a general increase or decrease is impracticable, individual rise or reductions are quite justified provided the conditions necessitate them. It is for this reason that the railways must be in close contact with the business community.

The proper authority to consider all this is the Railway Rates Tribunal. The need for this was felt even in

⁶ Speech of the Railway Member. Railway Budget for 1939-40, p. 1.

Road-Rail Transport

England only as late as 1921 and a Tribunal was constituted under the Act of 1921. The Indian Rates Tribunal would have to examine the rates structure and see whether the classification is just. It should try to simplify the rates structure consistent with the variety of traffic offering. Membership of the Tribunal calls not only for legal knowledge but also familiarity with business and geographical conditions, and a specialisation in the economics of transport. In recommending the establishment of a Railway Tribunal in India, the Acworth Committee suggested that it should consist of three members: the Chairman to be one of legal experience and the two other lay members, one representing the railways and the other the commercial community. In order that there may not be too many sundry applications of a frivolous nature, it recommended that a deposit of a hundred rupees should be made. The Committee drew particular attention to the high risk-rates quoted. Thirteen years after, the Wedgwood Report makes the same allegation. In certain cases, as on the G.I.P., the Railway risk rate is 57 per cent higher than the Owner's risk rate. The Committee felt that there was real cause for this complaint as the difference in rate did not reflect the degree of risk involved. Needless to say, this is particularly regressive in the case of class and schedule rates. All these matters should, therefore, justly fall within the province of the Rates Tribunal.

The railways can also help to increase prosperity by allocating industrial sites to industries that hold forth great prospects. The English railways make it a point to attract factories to the lines served by them. A thorough survey of the sites available should be made with a view to ascertaining their suitability for industries. The site should be large and ideally suited for the industry. It must have near access to labour and raw materials, should

The Problem of Increased Earnings

have water facilities, must have a good road to link it up with the rail-head and should be such as to ensure financial success. Besides this, the railways could lease out or sell parts of the land adjacent to railway siding for industrial purposes. It is common knowledge that each railway has open spaces adjoining its line. These the railway classes as A, B, and C according to their indispensability. 'C' class land is the poorest and least needed by the railway.

B' comes next and 'A' first. Most of these spaces lie vacant without being put to any use. If these could be let out, industrialists would take them up for constructing godowns. The necessity for these warehouses and godowns has been increasingly felt, more so on account of the Co-operative Department agreeing to subsidize their construction. By letting or selling these waste lands, the railway would be making good use of its properties.

One wonders why our railway administrations are so tardy in the popularisation of such paying schemes. In Britain and other advanced countries the provision of such warehousing facilities has been an accepted method of increasing railway revenues. The L.M.S. Railway in Great Britain has opened warehouses at a number of important centres. In addition to this, they have requisitioned the services of a fleet of lorries that undertake the delivery services. Thus, as soon as consignments arrive at a particular station, they are warehoused and the consignments are sorted out and delivered by the Company's road service to the consignees. This would be possible only by effective co-ordination of road and rail services. By doing so, not only is quick transit of goods facilitated but, by sorting the various consignments at the rail-head and delivering them, the traders are saved the trouble of handling this on their own. Where the consignments are of large bulk and the traffic is regular, a slight concession in rate offered would go a long way in

Road-Rail Transport

enlisting the co-operation of the business-community. The State of Hyderabad has been a pioneer in this field of road-rail co-ordination. By running a number of out-agencies at twelve centres, the fleet of buses and lorries of the State Road Service is used to run in co-operation with the State Railway and to collect and deliver goods at the rail-head. The rate charged varies according to the distance between the rail-head and the out-agency and the heaviness of traffic offering. Thus, the actual rate charged varies between half a pie per maund-mile and two pies per maund-mile. The North-Western Railway has similarly formed a new Company called the North-Western Transport Company wherein the Railway is the chief partner. A co-ordinated road-rail services is thereby offered between Lyallpur and Jhang.

Under Section 51 (A) of the Indian Railways Act of 1890, the Railways are empowered to run road services to facilitate movement of traffic on their lines. The clause was so worded that it meant that such road powers could only be exercised in the case of through traffic. It was subsequently felt in 1932 that this should be amended so as to empower them to run them for additional service too. The advantages of a road and rail service under the direction of a single system hardly need be emphasised. Nevertheless, the possibility of voluntary co-ordination with other road operators should not be kept out of consideration, for, by maintaining a separate road service, a railway cannot entirely solve the problem of road competition with the other road operators. It would entail unnecessary administrative and financial responsibility which, if it would be possible, the railway would like to obviate. However, voluntary co-ordination would be only possible where the route served is a ' feeder ' road and does not run parallel to the railway. The reasons for this are obvious; since the jurisdiction of each would be clearly

The Problem of Increased Earnings

defined and complementary to each other, any such co-operation should result in mutual good.

The advantages of the railways themselves taking to the roads are great. Firstly, the entire road section could be used as an extension of the railway system entailing no break of service. Secondly, the difficulties in the way of negotiating the terms on which co-ordination would otherwise have to be effected are eliminated. Thirdly, where a branch line does not pay its way, instead of incurring the high and unnecessary costs of operating a full complement of half-empty trains, a road vehicle could be pressed into service, thus necessitating a less frequent train service. Lastly, it would be much easier for the railways to offer better services than private undertakings because of their high financial position. In the absence of the railway doing so, co-ordination of the first type *viz.*, voluntary road-rail co-operation will have to be resorted to. This would ensure through booking facilities, interchangeability of tickets and use of each other's booking offices and other facilities. That this is possible only on feeder routes is seen from the fact that the United Motor Service of Coimbatore which works feeder routes as an out-agency for the South Indian Railway at Gobichettipalayam, Palladam and Dharapuram, nevertheless, competes with the railway on other routes such as Coimbatore-Mettupalayam.

The assumption of road powers would necessitate some expenditure on special establishment and would make it compulsory on the railways to conform to statutory control. Some measure of the economy of road transport could be obtained by trying light cars of low running expenses on branch lines. The ultimate end in view of all undertakings, road or rail, should be the maximisation of the load factor. We have seen that, for the most part, the costs of railway operation are largely fixed so that if heavy

Road-Rail Transport

traffic were to share these costs, the cost for each consignment would be less than when the load factor was small. By utilising such a vehicle as would have a high load factor in comparison with the traffic, the railway receipts could be maximised. In all countries of the world and even in India, diesel electric cars are now being run on shuttle services to afford frequency of operation. On a particular branch line the M. & S. M. Railway runs only such vehicles as a measure of economy. It would appear that they are now experimenting with a new type of car fitted on a Ford V8 petrol run chassis. The cost of working such a vehicle has been found to be even less than that for a Diesel electric car, though the depreciation is greater. On the foreign railways, pneumatic tyred rail cars have been experimented with. The advantage of this would seem to lie in the minimisation of the tractive power needed to haul the vehicle. The scope for technical research in this sphere is therefore unlimited.

While these are a few important ways in which railway revenues could be enhanced, the scope for effecting it is very great. The means adoptable are partly financial and partly administrative. With regard to the first, much could be done by lowering freight rates wherever the need for it is felt. What is needed is a co-ordination of freight rates. The freights should be so adjusted as to facilitate and develop the internal trade of the country. This could be done by showing concessions to nascent promising industries or to large and regular clients, either in the shape of rate reductions or through rebates on the traffic booked. A number of recent reductions—mostly of a temporary character—have been introduced. An interesting example comes from the North-Western Railway. This Railway allowed a rebate of 20 per cent of the freight charges on raw full-pressed cotton booked from any station north and east of Samasata to Cawnpore and Delhi. The

The Problem of Increased Earnings

period was restricted to about a year or so. The condition was that a minimum of 75,000 maunds was to be booked within the period specified and that no consignment should be made by any other means. This suggestion must, however, be taken *cum grano salis* since a rebate, though the most generally accepted form of concessionary treatment, may be criticised as discriminatory treatment.

The Railways should try to develop the industries of the nation and lighten the burden of freight rates on exports and raw materials. Both of these are essential; the former, to enable the national products to compete with foreign imports and the latter, to reduce the costs of raw materials to the industries. The Eastern Bengal Railway was approached with a request to effect such a co-ordination of rates on broad national principles rather than to suit the needs of special areas. The Railway, however, replied that the general level of rates in force on one railway reflects very closely the particular conditions under which it has to operate and that equality cannot be secured without ignoring the existence of fundamental differences in conditions as between one railway and another and thereby seriously jeopardising the finances of the different railways.⁷

There is great need for a speeding up of our services. Quick transit is very essential in our highly industrialised life. Specially during such disturbed periods as the present war period, expeditious transport is all the more necessary. This is specially important in the case of freight traffic. The average speed for a goods train in India is just about 16 to 25 miles per hour as it will have to depend upon the strength of the bridges and the permanent way. Nevertheless, the speeds attained on the Indian Railways are so low that this may not be a great and imminent limiting factor. The Wedgwood Committee say that "the distances

7 *Vide* Madras Chamber of Commerce Report, 1936.

Road-Rail Transport

between the chief industrial centres and the ports, and between the producing and the consuming areas, make a quick goods service not only desirable but essential.”⁸ Something in this line is being done to assuage the problem. A few express Goods Services have been inaugurated; as for example between Madras and Tuticorin and Madras-Ernakulam. While this is improvement enough, the need for speeding up all trains still remains. Much could also be done by declaring a flat rate on ‘Smalls’. The postal principle has been adopted on the road system as a method of charging so that the railways could adopt this much to their benefit. While we are still on the question of goods traffic, attention may be drawn to the great need for simplification of the clerical formalities involved. Secondly, the railway receipt could be made into a negotiable instrument, and the risk note form A made less onerous and non-committal. The publication of goods train timings is another of those measures designed to aid traffic on the railways. Nothing is more troublesome to a large businessman than frequent inquiries into changes in rates and fares. If something could be devised to minimise this, that itself would be a great benefit. Recognising this, the East Indian Railway felt the need for a central organisation for the dissemination of such information. In eliciting the views of the various Chambers of Commerce, the Commercial Manager of the E.I.R. said that the railways would create a central office, possibly under the supervision of the General Secretary of the Indian Railway Conference Association whose duties would be to register all applications from individuals or firms for advice of changes in rates for specific commodities. All railways would send immediate advice of any change in rates for those commodities to the office, and the Central Office would communicate such changes to the respective

8 Wedgwood Committee Report, p. 30.

The Problem of Increased Earnings

applicants.”⁹ Thus, interested parties, and these will be mainly large industries and firms, would be kept informed of all freight changes that would affect them. The Chamber of Commerce appreciated this, as much simplification could be effected thereby, but suggested that the Central Organisation could disseminate news to large centralised associations such as the Jute, Paper, Cotton and other bodies avowedly meant to look to the interests of the parties concerned. This, they suggested, would save much registration fees that would be necessary if single parties were to do so.

Other minor facilities could also be provided, such as permission to conduct a survey of consignments when they arrive in a damaged condition. As the practice prevails now, when a damaged consignment is taken delivery of by a party, he has to intimate the fact to the Insurance Company which would send its representatives to verify his statement. In such a case, there is scope for fraudulent claims being proffered against the Insurance Companies since the consignee could pilfer a part of it and then attribute it to damage in transit. The various Chambers of Commerce, therefore, felt that, when in doubt, the railway should allow consignments to be weighed at railway stations to ascertain the extent of the damage done. To restrict this privilege to genuine cases alone, a fee should be made the condition of the use of the railway weighing machines. This fee would not be refundable in cases where there has been no loss in weight. A practical difficulty, however, is that the Insurance representative may not be able to effect a survey within the time allotted; more so if it were a way-side station. The question as to who should bear any demurrage charges must be left to the Insurance Companies to answer, for normally they themselves ought to bear them in genuine cases. One way of avoiding

9 *Vide* Bengal Chamber of Commerce Report for 1937, p. 721.

Road-Rail Transport

this would be for the Companies to empower the Station Masters to conduct the examination on their behalf.

Recent measures adopted to augment railway passenger receipts are (1) the opening up of a number of way-side stations or train halts. These could be made permanent at places where traffic offering is regular and fair. The expenses incurred would be very little since one booking clerk could serve the station. He could be asked to make the next immediate station his head-quarters so that the necessity for remaining at the former overnight would be obviated. (2) Between important points additional shuttle services should be run. (3) Through road and rail tickets should be issued wherever that is possible. On the East Indian Railway combined Rail and tram car tickets are issued in Calcutta. The fares for these monthly tickets would be the existing railway fares on the rail portion according to class travelled by, plus a reduced charge on the tramway portion. Similar rail-cum-bus tickets are also issued not only in the Metropolis but also at out-agency stations. For example, a co-ordinated road-rail service was run by the E.I.R. between Patna Junction and Digha Ghat, the out-agency being served by the Co-ordinated Transport Co., Ltd. The through fare was eight annas for the upper classes and three annas for the lower class. So too, rail-cum-road tickets are available at other places such as Dehra Dun, Mussoorie, Ranchi Road and other places. (4) Additional booking offices could be opened in the interior of towns so that purchase of tickets and booking of consignments could be made easier (5) Extension of hours during which consignments are accepted or delivered. And lastly, permission may be given to important clients to make use of the private sidings of the railway, for which service a nominal fee could be charged.

All new expenditure on railways should be so regulated as to maximise income. No point would be served by

The Problem of Increased Earnings

depending entirely upon economy campaigns for increasing receipts. Every building programme has to be so laid as to ensure high returns from the capital invested. On the American Railways, the economic possibilities of schemes of this nature have been fully investigated. When the Boston and Maine Railway constructed a new railway station, it provided for a maximum of revenue consistent with economy of space. It built a hotel, offices and warehouses alongside the station and even the roof was utilised in providing for an excellent up-to-date stadium. The passages were lined with shops. Thus, not only was the convenience of passengers maximised but, the income was more than what it would have been if reliance had been placed entirely on economy of construction alone.

These are the broad lines along which steps should be taken to increase the revenues of the railways. It must be reiterated that transportation is a service which, like other services, needs effective salesmanship. No pains should be spared in devising new ways and means of increasing railway receipts. Contact with the business community should be intimate and the unity of interest of the railways and the public needs stressing. It should be the duty of the Railway Information Office to publish all information to the Press and otherwise carry on propaganda. The Wedgwood Committee suggested that it should be the primary function of this office to "bring home to newspaper readers that the railways as an organisation are alive and progressive—that they are open to new ideas especially where the comfort of the travelling public is concerned, and anxious to take their costumers into their confidence." This could be achieved only by active publicity and advertisement, and last, but not least, through research into possible ways of improvement.

CONCLUSION.

This concludes our study of railway policy in India. Only the most prominent aspects of the problem have been dealt with, and the idea, as already mentioned, has been to deal with the question as it affects the road-rail situation. In the next part road motor transport has been taken for consideration and there too the study pertains to the operational basis of motor transportation. In this part we have started with a review of railway rate policy and had occasion to see how difficult it is in practice to adopt a rate structure that would be satisfactory to all interests alike. Railway rates are the result of compromise. Varied interests have got to be satisfied and the different principles of charging have to be mutually adjusted to suit specific conditions. Broadly, the minimum rate quoted should in no way be less than the cost of transportation, and the upper limit should be set by the value of service and the capacity of the commodity to bear a high rate. For agricultural commodities and goods of low value and great bulk the rates would have to be low. Our study of individual freight rates has proved that the average rate of incidence on the commodities examined is about 15 per cent, which is rather high. In America Mr. Jackman calculates the incidence of freight rates on wheat prices at only 11·79 per cent. On manufactured tobacco the incidence is as low as 1·47 per cent. On cigarette tobacco in India the incidence of freight on a maund of tobacco shipped from Guntur to Sukkur is as high as 15·5 per cent. The incidence in the case of wheat may be taken at about 20 per cent. In the case of wheat booked from Lyallpur to Calcutta it is 27·3 per cent. Mr. Tiwari who has made a detailed study of wheat freight rates is of the belief that wheat rates have been rising and when the low prices of wheat now existent as compared with pre-war prices are considered, the rate of incidence becomes all the greater. In South Africa, the Railways are pledged

The Problem of Increased Earnings

to a policy of low rates on agricultural and mineral products. There, however, it appears that this has been followed blindly so that the traffic does not pay for the actual expenses of transportation, so much so, the industries are forced to subsidize the low valued traffic. We have it on the high authority of Mr. Van Biljon that so unhealthy has been the situation that in 1929, though the Administration showed a net surplus of £767,000, the percentage volume of low rated freight which was 76 per cent of the total, actually contributed only a meagre 25 per cent of the railway revenue; and when the deficit in 1933 was £627,700, the respective proportions were 85.2 and 41.6 per cent. Needless to say, though agricultural commodities should be lightly charged, rates should not be so low as to penalise other traffic.

India is a country of vast distances so that an individualistic freight policy is fatal to our interests. This is especially so in the case of through traffic passing over a number of railway administrations, for the railways charge only on the actual distance travelled on each system without adopting the continuous mileage principle. In South Africa specially low rates are quoted so as to compete with the water rates. The institution of sea competitive rates has resulted in the diversion of traffic to the railways. The South African analogy is not always good to copy, as the rational bases of many rates are very meagre. Sea competitive rates in South Africa affect coastal shipping so that they are deprecated there. But here in India, where the most important share in coastal shipping is in the hands of prosperous foreigners, we need not despair of the ill-effects of such competitive rates. On the other hand, since the shipping rates themselves offer competition, the railways could pay them back in their own coin. Low rates on export commodities are quite justifiable, for then only would the competitive

Road-Rail Transport

ability of our exports be enhanced. It is in this sense that railway rates act as a second line of protection. Similarly, low rates should be declared on raw materials. But in this case the advantage should not accrue to foreign exports, but only to internal trade. The ultimate end in view should be to enhance the competitive power of India in the markets of the world. Viewed this way, the quotation of low port to port rates is not unjustifiable provided it applies to exports. But on no account should this be made the ground for discrimination.

What is needed is a national outlook. This is impossible under the diverse nature of our railway system which is partly state owned and partly company managed. It would be too much to expect of the companies to take a broad view. They are essentially profit-making bodies and are perforce individualistic. This individualism can be got over only by nationalisation of the railways or by amalgamation. The Railway Enquiry Committee of 1937 did not favour unified control under a single administration. It felt that if all the Indian Railways were to be amalgamated, central control would become weak and all the inertia of an outgrown body would creep in. The Committee was impressed with the need for preserving a sort of healthy rivalry between the different administrations and upheld the sovereign maxim of unity in diversity. They, therefore, suggested that ultimately, the railway system should consist of seven large groups in which the Eastern Bengal and Assam Bengal Railways should be clubbed into one and the South Indian and Madras and Southern Maratta Railways should be amalgamated into another. Whatever be the procedure to be adopted, what is needed most is a unification in the rate structure.

In the matter of railway rates, there is great need for a Central Tribunal which could guide rate policy in the

The Problem of Increased Earnings

interests of the nation. The Railway Rates Advisory Committee is now the body that investigates into the cases that come up before it for decision. It consists of an experienced Lawyer-President and two members, one representing the commercial interests and the other the railways. The Committee has power to try cases of unjust discrimination arising out of section 42 (A) of the Indian Railways Act, complaints in respect of terminals, conditions of package and other grievances arising out of the railways not fulfilling their obligations. The procedure followed is cumbrous. Every application has, first, to be forwarded with a deposit of Rs. 10 to the Secretary of the Railway Board clearly stating the grounds for complaint together with a statement of the redress that is expected. The railway concerned would then have to prepare an answer within a month of the receipt of the application and submit it to the Railway Board after which the Government would consider whether it should be referred to the Rates Advisory Committee. This Committee is empowered to call for all the necessary information that could throw any light on the issue in dispute and then forward its tentative conclusions to the party. The party may make further representations after considering which the Committee would pass final orders. Though a slight relaxation in the rules has been allowed, there is too much of 'red tape' involved in the procedure, and the Railway Board's influence is seen in its power to forward or withhold any application to the Committee. This Committee can in no way be an effective substitute for a Rates Tribunal. According to the English practice, the original classification is done by the Rates Advisory Committee and any subsequent question of interpretation or dispute is referred to the Tribunal for decision. Thus, the Tribunal is in addition to and not over and above the Advisory Committee. It is only such a body that could impartially

Road-Rail Transport

view the equity of rates charged. The fact that at a particular rate there is some traffic offering should not be taken as indicative of its reasonableness. Contrariwise, a close scrutiny might disclose that they are really regressive and that if they could be slightly reduced new traffic would be forthcoming. That would be the best argument for their reduction. An Advisory Committee, by its very nature, is only advisory; it does not enquire into the conditions of transport of its own volition unless its attention is drawn to it. A Rates Tribunal should actively interest itself in vigilantly safeguarding the interests of both railways and traders alike. It should have untrammelled powers to investigate into particulars and should have a free hand in the exercise of a rational rate policy directed on national lines.

The need for this is specially great now that the railways have to meet the competition offered by the motor vehicles. The economics of road transport forms the subject of the next part of this book. It will be seen therein, that the loss in revenue that the railways have to suffer on account of the growth of this new means of transport is estimated round about Rs. 4½ crores (in 1937) of which 3¼ crores were under passenger traffic alone. Road Motor transport has great advantages, both in the flexibility of operation and economy in working costs. The railways, always in need of reform, have to be rationalised so as to enable them to fortify themselves against the inroads of this growing menace. The problem, therefore, is mainly financial. If the railways are to maintain stability, they should not only economise their expenditure on the lines suggested above, but should adopt all possible means of increasing their revenue. Economy and research should be the two lines along which all reform should proceed. As the Swiss delegation to the Washington Road Congress remarked, "it will hardly be necessary to stress the fact

The Problem of Increased Earnings

that the general utility of the railroads, at least the trunk lines, is incomparably greater than that of the motor vehicles, especially for bulk transportation, and their superiority in regard to constant availability for the conveyance of any desired quantities will remain even when the number of the existing motor vehicles is much greater than at present.”¹⁰ Railways must, and will, continue to be our chief transportation agency because of the extent of the country and the vast distances to be covered. Properly regulated, they could be made the chief engine of progress, and if mismanaged they would become a powerful weapon of destruction. It is for this one reason, if for no other, that we want the Railways to be nationalised and State managed.

Most civilised countries of the world have adopted the principle of State management. In India, however, we have the anomaly of a plurality of systems. The very diversity of administration calls for comment; and, justly too, the demand for nationalisation of the railways has been made long since. The Acworth Committee thought the demand quite reasonable, and their opinion deserves quotation in view of the subsequent views of the Wedgwood Committee. The former said “that no scheme for the establishment of Indian domiciled railway companies is acceptable. Only if relieved from risk of loss will share-holders subscribe at all. Even when so relieved, they will only subscribe relatively small amounts. Such small amounts would not justify entrusting them with substantially independent management. And unless management is substantially independent, the justification for the existence of a company disappears. And, therefore, approaching the question not as one of national sentiment, but purely from the practical point of view, we find ourselves in agreement

¹⁰ Washington Convention of the International Association of Road Congresses, 1930.

Road-Rail Transport

with the almost unanimous opinion of Indian witnesses, and recommend that the undertakings of guaranteed companies, as and when the contracts fall in, be entrusted to direct management of the State.”

The Indian Railway Enquiry Committee of 1937 approach the question with pusillanimity. They are terrified at the administrative responsibilities and the probable inefficiency of unbusinesslike control, and read their lesson from history. The inglorious record of State management and construction during the period 1869-1882 frighten them into an acquiescence of the status quo. The same fears that haunted Thomas Robertson¹¹ plague his successors. The usual objections trotted out *ad seriatum* are (1) the probable difficulties of politics hampering effective administration, as in South Africa, (2) the difficulty of conducting the railways on strictly commercial lines with a single eye to profit, (3) the probable ill effects of the absence of a strict Board of Directors, and (4) the mal-apropism of the State having to sit in judgment over itself when any dispute comes up for settlement.

These are trivial objections when the larger interests of the country come up for consideration. A State managed railway would, by its very nature, be better able to appreciate the aspirations of our industries and trade and make the conditions propitious for their achievement. Financially too, the huge amounts of money that go out of the country in the shape of profits, directors fees, etc. could be conserved and kept within the country for industrial use. This would not only minimise expenditure, but release moneys for the finance of industries. Again, Government would be better able to bring about a *rapprochement* between the employer and the employees and make the conditions of their work better. The great

11 *Vide* Robertson's Report on the Administration and Working of Indian Railway, pp. 22-26.

The Problem of Increased Earnings

difference between the low paid clerks and the huge salaries of the high officials could be rendered less glaring by a raising of the lower scales of pay. Lastly, the State can undertake large capital expenditure, and by adopting a national rate policy on the lines suggested above, help to expedite that national development which is the ultimate goal of all our aspirations.

CHAPTER VII

THE ECONOMY OF MOTOR TRANSPORT

SINCE times immemorial, the road has been our chief means of communication and has always constituted an integral feature of our economy. It is only within the last century that the 'iron horse' has wrought a revolution in the means of transport. Suited as the railways are for heavy and long distance traffic, they were almost the only agency of real importance. It is only with the turn of the century that the internal combustion engine came on the scene, and it might be said without being guilty of gross exaggeration, that it has been the most important invention of our times. But it was not till the war that the immense potentialities of this means of transport were discovered, and ever since then it has been gaining from strength to strength.

The Great War ushered in a period of great industrial activity and the subsequent war boom strengthened this tendency of business to expand. Every war necessitates the provision of services, and since the time within which this should be done is limited, there is heavy pressure not only on the manufactories but also on the transport undertakings that carry these goods. Speed is the very breath of modern industry, and a slow disorganised transport system is an anachronism. During the last war when the railways were the chief agency for transport, the pressure on the railways was so great that they could not by themselves manage to tackle the situation. With the increased demand for their services, their operating costs rose and together with them the depreciation expenses had to rise in consequence. The result of this was an all round increase in freight charges. This explains a similar freight surcharge of 12½ per cent on our railways today. The transport costs of business enterprise having risen, the need for a cheaper and speedy service was felt. For

The Economy of Motor Transport

this the motor vehicle was best suited as the existent conditions were most propitious for its operation.

The vast strides taken by the motor industry are reflected in the production figures for motor vehicles. In 1894, the number of motor vehicles registered in the United States—the home of the motor car—was only four. In 1935, the number in that country rose to nearly eleven millions, and the total for the whole world stood at over thirty seven and a quarter millions. It is clear, therefore that in the United States alone there is nearly a third of the total number. During the depression years of 1930, 1931 and 1932, there was a fall in the figures for all countries, and the exports of the United States, which are the chief manufacturers, showed a steeper fall than was the case with the United Kingdom, which ranked second. Even during the depression years, the exports of the United Kingdom did not fall below 92 per cent of the 1929 figure. This is mainly due to the fact that the United Kingdom specialises in the manufacture of light cars with high horse power, whereas the United States of America exports are largely of heavy vehicles. Canadian exports of motor vehicles have, on the other hand, shown an increase. As between these three countries, the share of Canadian exports in India in 1935 was 4,584 or 20·9 per cent. In New Zealand it fell from 28·2 in 1928 to 19·2. Australian imports of this make rose from 16·8 in 1928 to 41 per cent in 1935.

India is an important market for motor vehicles and its share in the import trade has been increasing. With regard to motor cars, the maximum was reached in 1928-29 when 19,567 cars were imported. Of this, the share of the United States of America alone was more than 50 per cent. The year 1929-30, however, is a record for imports of omnibuses and vans when 15,306 were imported. Here again the share of the United States of America was

Road-Rail Transport

nearly 75 per cent. The depression, however, had a disturbing influence and there was a falling off in imports. The following figures for a few years taken from the detailed statement in the Appendix makes the position clear.

IMPORTS OF CARS.¹

Year.	U.K.	U.S.A.	Canada.	Total.
1928-29	3,645	10,145	4,366	19,567
1929-30	3,758	9,620	2,318	17,399
1932-33	3,958	1,201	296	6,201
1937-38	6,419	4,876	1,612	15,697
1938-39	5,119	3,170	972	11,058

IMPORTS OF OMNIBUSES, VANS, ETC.

1928-29	473	7,572	4,616	12,790
1929-30	398	12,017	2,779	15,306
1932-33	517	1,793	338	2,676
1937-38	2,337	10,035	2,197	15,077
1938-39	607	5,095	1,958	7,808

From this table it is clear that the worst year for both types of vehicles was 1932-33 when the imports were least. There has been an improvement since then, and in 1937-38 the figures show considerable improvement, and those for omnibuses and vans exceed the figures for the base year by nearly 25 per cent. The last year under review registers a curtailment under both heads. Nevertheless, what stands out prominently is the fact that the share of the United Kingdom has been increasing. This, we have observed, is due to the preference for light British cars with high horse power, entailing low running costs. This growing improvement in the position of India in the Empire has been repeatedly emphasised by the Department of Overseas Trade. In 1934, 8 per cent of all vehicles entering world trade went to India and 10 per cent of United Kingdom exports were absorbed by the Indian

1 Report of H. M. Trade Commissioner for 1935.

The Economy of Motor Transport

market. The Trade Commissioner in his report for 1935 had occasion to remark in this connection as follows:

“ There are signs that the Indian car owner is now paying greater attention to low running costs, the life of the vehicle and its second hand selling value, all points which are in favour of the smaller horse power United Kingdom vehicle. Although more intense competition will probably have to be faced in the future, it is likely that the present vogue for the smaller United Kingdom car will continue and that a considerable amount of the ground gained during the past three years will be retained. If the recent reduction in the horse power tax in the United Kingdom results, as is hoped, in the mass production of greater numbers of higher horse power vehicles for the home market, then the United Kingdom manufacturer will at last have an opportunity of scaling down his prices to enter the field against his United States of America competitors in the market for 20-30 h. p. vehicles of which the up-country ‘ bus fleets in India are mainly composed ’.”

The motor car is increasingly becoming a ‘ style product ’ needing efficient salesmanship. There is probably no other vehicle in every day use that has undergone so many changes in shape and design as the modern car. Each year sees a new model and, more often than not, we find the succeeding year’s model being introduced in the preceding year. In spite of its growing popularity, the motor car still is an article of luxury to sell which it needs all the art and sweet cajoling of the motor dealer. In the United States of America, the number of motor cars far exceeds that of telephones. In 1935 there were 206 motor vehicles to every thousand of population, *i.e.* a car for every five persons, which is astonishing. In the United Kingdom it is 44 per 1000, and India finds no place in the table. The total number of motor cars running in

Road-Rail Transport

the different provinces of British India (*vide* Statement in the Appendix) as on the 31st March 1939 was 159,245.² The population, according to the last census, was 270 millions and allowing for a ten per cent increase, the population might be estimated to be nearly 295 millions in 1939, which works out to roughly, in round numbers, a car for every two thousand. Of this figure, the share of Bombay was 31,738. Madras City accounted for 15,020 and Madras province for 17,416. For the whole Province of Bengal, including Calcutta and Howrah, the corresponding figure was 28,217.

The motor vehicle affords a very cheap service because of its low capital costs. It needs very little capital expenditure since, on an average, a vehicle would cost from three to four thousand rupees. Moreover, with the rapid development in the system of instalment purchasing, the sale of motor vehicles has increased considerably. By allowing a purchaser to make his own purchases and requiring him to make at the outset only a small cash payment, it acts as a fillip to the industry by facilitating sales. The principle followed in this system is that the initial cash payment should be large enough and that the terms of credit should be short. Briefly, under the system of instalment purchasing, the consumer is financed either by the trader directly or through the mediation of a financial institution specifically set up for that purpose, which would, prior to the granting of such credits, investigate into the whole scheme in order to minimise the risks of loss. So, the sum fixed up for the initial payment together with the number of instalments over which the transaction will have to spread would depend upon the nature of the risk involved and the kind of business undertaken. "The financing of consumption, therefore, goes to popularise an advanced type of consumption which

2 Figures from the Statistical Abstract for British India.

The Economy of Motor Transport

has been accessible only to the well-to-do classes. The fact that the people are in a position to buy a higher type of durable goods enables the manufacture of these goods on a large scale and lowers the cost of production, which makes a higher consumption still more accessible to the people.”³

The United States of America is the pioneer in the field of this type of finance which, as Prof. Seligman says in his ‘Economics of Instalment Selling,’ is best suited to the motor car industry. The risks involved in break of contract are least as will be seen from the statistics of reposessions of new cars in the United States:—

RATIO OF REPOSSESSIONS TO SALES OF NEW CARS IN U. S. A.⁴

Ratio of initial payment to selling price (per cent).	Ratio of Repossessions to sales (per cent).	
	1925	1926
30	1.72	2.09
25	3.81	4.02
under 25	10.96	11.52

It will be seen that it is only in cases where the initial payment is less than 25 per cent of the price that the reposessions are largest. In the two other cases it is negligible. “Keen competition led to credit being given in some cases on an initial payment of 20 or even 10 per cent, and over a period of 12, 16 or even 18 months. The resultant failures led to the adoption by the National Association of Finance Companies and the National Automobile Dealer’s Association of standard terms. These provide for a minimum initial payment of 33½ per cent for new cars and 40 per cent for used cars, and a period

3 Dr. F. Zweig: *The Financing of Consumer’s Credit*.

4 A Survey of the Trade in Motor Vehicles: Thirtieth Report of the Imperial Economic Committee, p. 46.

Road-Rail Transport

of twelve months in either case.”⁵ In 1934, the values of the finance of new and used cars were 559,167,000 and 227,723,000 dollars respectively. Besides this sale of new and used cars, there has been a rapid development in the new form of business whereunder new cars are given in part payment for old ones. Usually, greater concessions are shown when the vehicles traded in are of the same make and firm. The following figures from the same report are interesting:

RATIO OF TRADE IN SALES IN 1934.

Ratio per cent of trade in sales.	Passenger cars.	Commercial vehicles.	Passenger & commercial.
On sales of new cars ..	77.7	55.8	74.7
On sales of used cars ..	47.8	40.5	47.3
Used cars as percentage of new cars sold ..	171.2	87.6	160.1

In the business as it prevails here in India, the initial payment to be made is a third of the price besides insurance premium required to cover third party risks. Apart from this, a deposit, partaking of the nature of a trust deposit has to be made to ensure fulfilment of contract which would be returned on the last instalment being paid up. The rest of the amount with interest at the rate of nearly 10 per cent is spread over eleven monthly instalments. In the case of used cars, the terms are more elastic and no insurance is made obligatory.

The demand for motor vehicles depends upon the purchasing power of the community. Next to houses, the most important and largest item of expenditure for an individual is the motor car. This demand depends upon

5 A Survey of the Trade in Motor Vehicles: Thirtieth Report of the Imperial Economics Committee, p. 48.

The Economy of Motor Transport

a number of factors. The first of these is the price of the vehicle itself. With the lowering in prices due to rationalised large scale production, the demand for motor cars has shown a constant tendency to increase. The length of metalled roads in India in 1935-36 was 82,284 and that of unmetalled 224,433. Even if there were a small percentage of increase in the length of these roads, *ipso facto*, the demand for automobiles would increase. "The Central and Provincial Governments are committed to a programme for the improvement of roads throughout the country, and there is no doubt, that, once the present depression lifts, the expansion of motor transport will proceed at a greatly accelerated pace." ⁶ Decreased costs of operation have enhanced the value of the motor vehicle so that they are greatly in demand in all distributive services. More than anything else, it must be confessed that a good fleet of cars has its own advertisement value. The great absorption of motor vehicles both in public and industrial uses in the United States of America is due to the low cost of petrol. America is blessed with plentiful supplies of petroleum. In Great Britain, due to the high taxes on petrol and motor vehicles, there is great need for keeping down operating expenses as far as possible. It is this that explains the increased tendency to produce light cars of high horse power. This is true even in the case of lorries and freight cars. In 1935, it was estimated that the cost of a two ton chassis was £190, whereas that for a four ton chassis was £400. There was, therefore, not only an advantage in initial cost but also in running costs, since a four ton lorry consumed more petrol, was more difficult to manage and had to bear a higher rate of taxation. It would, therefore, be cheaper to substitute two 2-ton lorries for one 4-ton lorry. The most important single agent influencing demand, however, is the standard

6 Report of H. M. Trade Commissioner for 1935.

Road-Rail Transport

of life. With an increasing standard and a rising sense of aesthetic values, the place of the motor car in every day life is better appreciated. Needless to say, this standard of life depends upon the general conditions of business. Automobile sales, thus, show a high degree of correlation with general business activity, as is evidenced in the falling figures for car imports in India during the period of the depression. As Mr. Horner says, the trend of business activity exerts an important psychological influence on the demand for automobiles. If a graphical representation of the trend of business activity and the changes in demand for motor vehicles were to be made, it would be observable that the curves follow each other very minutely. The trough of the depression in 1932 coincides with the least demand. This is statistically proved in the table quoted in a preceding paragraph. The motor dealer has, therefore, to feel the pulse of business and the likes and dislikes of his customers before a new model could be introduced into the market. The utmost care is needed before further expenditure can be launched upon. To quote the very high authority of Mr. S. M. Dubreul of the General Motors Corporation, "the period of new model introduction in the automobile industry is a 'blind spot' during which it is not possible for any producer accurately to judge the actual rate of seasonably corrected demand, because of the distortion which results in the seasonal movement at this time. It is not until all important producers have introduced their own offerings, have completely liquidated their old model stock that may have been carried over, and have built up the field stock of the new models, that it is possible accurately to appraise the true rate of retail demand. Consequently, during this period the fact that one line of cars is moving very well is not indicative of the general level of the market." ⁷

7 *Vide* "The Dynamics of Automobile Demand," p. 131.

The Economy of Motor Transport

The low capital expenses place the motor vehicle at a great advantage and increase its competitive power against the railways. The railways have to invest a huge amount of capital in their machinery, track and rolling stock. The total capital at charge in 1937-38 of the railways in India was 754 crores of rupees and the interest charges on this alone came to the high figure of Rs. 29,26 lakhs. Apart from the low capital costs, a distinction between the railways and road vehicles has to be drawn. In the case of the railway, the fixed or standing charges account for the bulk of expenditure, whereas running costs form a smaller proportion. Moreover, as was seen from our foregoing study of the theory of railway rates, the rate does not depend very much on running costs, so that it is difficult to allocate costs to particular traffic. For example, if a hundred maunds of rice were to be shipped between two points, the exact expenditure incurred on this would be difficult to ascertain, for the freight train would be carrying many other trucks of different commodities all of which would contribute to the wear and tear of the running track, the rolling stock, etc. The reverse is true in the case of motor transport. In this case the running expenses form a large proportion of total expenses and it is possible to ascertain costs of operation for definite hauls. Taking up the Indian Railways again as an example, the operating expenses in 1937-38 amounted to Rs. 50,37 lakhs and the working expenses to Rs. 69.63 crores. The ratio of working expenses to gross traffic receipts was 65 per cent and that of net traffic receipts to capital at charge 4.2 per cent. On the London Passenger Transport, the capital expenditure as on 30th June 1938 was £131,281,061, and the percentage of working expenses to gross revenue was 76.4 per cent. Due to the relative cheapness of operation, the motor vehicle is able to compete with the railway on very low terms.

Road-Rail Transport

We have in the foregoing case taken the London Transport for comparison. Needless to say, expenditure here is bound to be great, because it is a thoroughly organised system consisting not only of buses and coaches, but also railways, tramways and trolley-buses. But it is the one man unit that is the worst offender in this respect and offers the greatest competition.

The motor vehicle has other advantages besides these. It has no special running track and, therefore, need spend no money either on its construction or on its maintenance. The roads are built by the public bodies and maintained by them, and they are as much the property of the public as of the transport services. To this extent, the motor vehicle differs both from the railway and the tramway. There being no necessity for the construction of a permanent way, motor transport has the utmost flexibility. Every country is usually well supplied with roads leading into the interior of the country linking up the main cities and markets of the country and affording easy marketing facilities. India is mainly an agricultural country depending for its prosperity on the villages. It would be impossible even for the most financially strong nations to undertake to ramify the whole country with a net-work of railways. The task would be impossible on account of the huge costs involved and the consequent high rates to be charged. Branch line construction is now much out of favour due to the falling off in receipts therefrom and the increased competition from the roads. A glance at the railway map of India will show that there are vast places that have not yet been well connected with railways and which, therefore, have necessarily to depend upon roads for marketing. And one is sorry to state that our rural roads are none too good. In the absence of anything better, they have to be used. Taking the Madras Presidency alone—the area south of Madras—the Coimbatore and

Madura districts are not so well provided with railways as the East Coast. Malabar suffers from a like paucity of railway facilities, as also South Kanara. The physical configuration of the country largely accounts for this. The Western Ghats make railway construction a problem of vast magnitude, so that it would be foolhardiness to launch upon any such scheme when good roads could serve the purpose. The alluvial plains of the Ganges and Jumna are the areas best supplied by railway. The areas from the north-west to the north-east of the Indian railway map, particularly, are criss-crossed with a number of lines. This is so, not only because of the richness of the areas served, but also because of the flatness of the country in which the lines are laid. Bengal is the densest province and in 1933 it had an average density of 679 to the square mile. Though having such a large population, 40 per cent of the province was more than ten miles from a railway line. In the case of Madras, the proportion of area more than 10 miles from any railway was 59 per cent which is the highest for India. There were 3.56 miles of railway for every 100 square miles in India, whereas the length of metalled roads was 19.15 miles out of a total road mileage of 26.8. Bengal had 55.4 miles of road for every 100 square miles, which is the highest for India. Among the provinces of India, Madras has the largest length of motorable roads. Sind and Assam are the two provinces that suffer from great want of communications. In 1933, Sind had 0.23 mile of motorable roads for every 100 square miles and Assam had one mile, though the figures for all roads publicly maintained were 39 and 22 respectively. According to the last census report, the total number of villages in British territory was 499,359, whereas that of towns was 1,698. These data conclusively show that ours is mainly a village economy which has to depend for its well being on an adequate road system.

Road-Rail Transport

The total length of all metalled roads in India in 1935-36 was 82,284 miles and of unmetalled roads 224,433, thus making an aggregate of 306,717 miles maintained by public authorities in British India. As against this, the railway mileage was 31,732 or nearly one-ninth of the road mileage. It must, however, be remembered that the figure for the road mileage refers only to the length maintained by public bodies. If the figures for all roads were to be taken, the proportion would necessarily be very much greater. Such being the case, the scope for road transport is infinite. It is only the motor vehicle that can be expected to go right into the very heart of the country and tap the resources that the villages so abundantly offer. Extensive road communications make for flexibility of traffic. There is no restriction as to the routes to be followed or the areas to be served. Once a vehicle is purchased, the owner can run it, wherever he chooses, provided he gets a licence from the public authorities. Obviously, the scope is greatest in the rural parts which are ill served by communications of any sort. Our villages have at present to depend upon animal transport for their marketing. A benign providence has so ordained that particular animals should inhabit regions suited to them. The bullock is, therefore, the best suited in the south of India and generally in the plains. In arid regions like Sind and North-west India the camel is an important transport animal, while in some parts of India even the donkey and the mule are useful. Animal transport must continue to be the central feature of our transport system for a long time to come. There are in India 150,000 miles of roads which are open only to such traffic as they are too bad for motoring. They are mainly earth roads which, during the rainy season, get cut into ruts and get hardened into sharp ridges in the hot sun making it impossible for any but iron-tired traffic. With the increased pressure of

population on the village, fragmentation of holdings and the trend towards the substitution of money crops for subsistence farming, the traffic on these roads has increased to such an extent that their upkeep constitutes a problem by itself. Wherever the land is flat, as in the rich alluvial plains and deltaic regions of the great river systems of India, it is easier for these animal drawn carts to carry heavy loads to the important towns and cities. There are a number of Indian villages that lie away from any road, and they have to depend upon such means of transport for communication with markets. Moreover, an integral feature of our rural economy is the *shandies* or market days which are specially prevalent in the south. On such days, a small village or town that lies in the middle of a rural area gets metamorphosed into a huge market, the transactions in which sometimes amount to as much as two lakhs of rupees. The co-operative movement is sworn to the principle of maintaining our village economy. It hopes to do so by the erection or subsidisation of warehouses and godowns at important rural centres. "Back to the village" is the cry of the movement, and the revitalising of rural areas constitutes the main plank of Congressite policy. It is not our purpose here to discuss this; what is attempted to be shown is the importance of linking up the villages with the arterial roads of the country. For this, the agency best suited is the country cart. In 1937 there were about eight and a half million bullock carts in India. The sphere of influence of the country cart is about ten miles, though instances are known where goods are carried this way for distances up to fifty miles. The economic sphere of operation may, however, be fixed at ten miles. Taking the average speed of a bullock cart at three miles an hour the time taken for a journey of this length would be about three and a half hours.

Road-Rail Transport

The average capacity of a bullock cart is from 12 to 20 maunds. In some cases, as in the Punjab and the North, the capacity is as much as 40 maunds due to the superior type of draught animal. Donkeys are quite an important draught animal in the Punjab, in such districts as Sialkot and Gujranwala. In other districts like Jullundur and Ferozepore the camel is much in use. Many of these can be seen in North Indian cities like Delhi hauling four-wheelers. The average carrying capacity of a camel is about 7 to 10 maunds.

Next to the country cart and animal transport, comes the motor vehicle. It might be considered to be the second important agent of transport. Forty per cent of India lies within ten miles of a railway on an average, the other 60 per cent remaining outside the ten-mile pale of railway influence. Where good motorable roads are available, the motor is unchallenged as a means of transportation. It is the most flexible and most convenient. The average capacity of a lorry may be taken at $2\frac{1}{2}$ tons. For small consignments the lorry is best. The motor vehicle can be brought direct to the village or the manufactory, goods loaded on the spot and delivered at destination. There is no need for incidental hauls as in the case of railway traffic, where there has to be a preliminary haul from the producing centre to the rail-head and from the rail-head again to the distributing centre. Not only does this entail loss of time and damage due to loading and unloading, but also to larger transport bills. In the case of linseed, we saw that the handling and cartage charges from village to assembling market in Cawnpore were 1.3 per cent of the consumer's price. The bagging, handling and cartage from market to consumer accounted for another 4 per cent, thus making an aggregate of 5.3 of which 3 to 4 per cent may be allocated to cartage alone. In the case of the Patna producer, shipping his

The Economy of Motor Transport

linseed to the oil mill at Patna, these charges came to 6 per cent per maund! In the case of the Guntur manufacturer shipping his tobacco to Sukkur, the transport charges to and from the rail-head or port amounts to nearly 6 annas per maund. These costs are additional to the railway freight which in certain cases amounts to 56 per cent of the consumer's price.⁸ These incidental expenses are obviated in the case of road motor transport, since once the vehicle is loaded, it has only to be unloaded at destination. There is absolutely no need for transshipment, entailing loss of weight. In road transport, the shipper is allowed to travel on the truck so that there is no loss due to pilferage which is so great in the case of rail transport. And again, direct shipment obviates all the formalities attendant on rail transport. The railways, we observed, make an invidious distinction between owner's and railway risk and charge fifty per cent higher rates sometimes, when goods are carried at the railway's risk. Committee after committee on railway administration has drawn attention to this great difference between the two rates and to the irritating formalities to be gone through at the goods shed. Signatures have to be given and documents exchanged, all involving cumbrous clerical procedure which is most annoying to the businessmen. The greatest difficulty is with regard to the risk note, form A. This is intended to relieve the railway of responsibility. The following is an example of a note form A, "to be used when articles are tendered for carriage which are either already in bad condition or so defectively packed as to be liable to damage, leakage or wastage in transit."

.....Station.

.....Date.

Whereas the consignment of.....tendered by me/us,
as per Forwarding Order No.....of.....(date) for

8 *Vide* Marketing Reports of the Government of India.

Road-Rail Transport

despatch by the.....Railway Administration to.....
Station, under Railway Receipt No.....of.....(date)
is in bad condition and/or liable to damage, leakage or wastage
in transit as follows:—

I/We, the undersigned do hereby agree and undertake to
hold the said Railway Administration over whose Railways the
said goods may be carried in transit from.....station
to.....station harmless and free from all responsibility
for the condition in which the aforesaid goods may be delivered
to the consignee at destination and for any loss arising from
the same except upon proof that such loss arose from misconduct
on the part of the Railway Administration's servants.

This agreement shall be deemed to be made separately with
all Railway Administrations or transport agents or other persons
who shall be carriers for any portion of the transit.*

Witness		Signature of sender	
		.	
Signature.....	Rank or	{ Father's name	
		{ Caste.....Age.....	
Residence.....			
Witness:			

Signature.....	Profession.....
Residence.....	Residence.....

The foregoing form shows how the entire responsibility
of undertaking all loss is thrown on the consignor. There
is no knowing what may constitute 'improper package'
and the onus of proving that there was misconduct on
the part of the Railway servants lies on the party
concerned. Needless to say, these formalities give a handle
for pilferage which accounts for a good percentage of the
actual consignment.

Apart from these legal shackles, there are the minimum
conditions specified. Each railway, it was pointed out,
quotes special rates at less than the usual rate for the
easy movement of traffic between points where this is

* S.I.R. Goods Tariff, Part I-A.

heavy. In doing so, however, it is made incumbent that a minimum consignment of a specified number of maunds has to be loaded. Similarly, when consignments are made as per wagon load, a minimum load per wagon is fixed. To add to this, packing conditions have to be complied with. All these restrictions are not to be found in the case of motor traffic. In spite of these precautions, there is considerable fear of damage due to the shunting operations attendant on taking-on and laying-off of wagons. Where the articles are fragile this danger of loss is greatest. Lastly, there is no need for classification of goods as on the railways. It is in the matter of classification that there is sometimes grave cause for complaint since the railway may place a commodity in a lower class, thus inflicting a higher rate.

A further point in favour of road undertakings is that the road vehicles can concentrate on those routes where traffic is heaviest. Not so with the railway. Whatever be the financial position of a line, it has to be operated, else it must be scrapped. A number of branch lines that were once constructed in the belief that they would pay their way are now found to be a drag on the railway administrations, necessitating their closure. In 1938, the Railway Board suggested that a number of branch lines of which the Cuddalore-Vriddhachalam branch line was one, should be closed down. These proposals, however, have not yet been put into practice. The closure of a line would represent an untold loss for a company. The running track would have to be torn up, the standing appurtenances such as signals etc. and the station buildings, all would go to waste. All these do not arise in the case of motor traffic, for, if one route fails to be profitable resort may be had to another. The tendency, therefore, would be for road vehicles to concentrate on the most paying routes so as to take the cream off the traffic.

Road-Rail Transport

Before the road traffic regulations came into force, there was a grave lopsidedness in the road services provided. While the best routes were overrun with too many services, the less paying routes suffered from too few. The present regulations make it incumbent on an intending purveyor of transport to take out a licence to ply on a particular route. So, at the time of application, it is this authority that sanctions the routes on which new undertakings could operate. Needless to say, these restrictions have a healthy influence on the even provision of transport services.

The Motor bus is specially suited for urban transport. "Adequate, cheap and efficient transport facilities are an essential requirement of urban life." With the increasing pressure of population in the towns and the consequent congestion, the natural tendency has been to spread out to the suburbs. This expansion is for the benefit of the people, since it brings with it the advantages of healthier life. Living in the country always is a sign of affluence. House rents are lower, since land values are less and it would be easier to maintain a larger house than would be possible in the city. All this would enhance social status and also make for a healthy and wholesome country life. This would be possible only if cheap and quick transport facilities were available. It is not everyone that has the means to keep a car; moreover when adequate transport facilities are readily available a private automobile would be a luxury. If passengers are to be attracted to the city, the service offered must be cheap as well as quick. The motor vehicle has both these advantages. It is quick, because not much time is lost in taking up passengers or setting them down, and it is very easy to make speed. As for working costs, it is cheap since the bulk of expenditure is attributable to the actual working. For rush hour traffic the omnibus is the most

suited. The railways by themselves would find the task impossible, and the tramways are slow and inflexible. It would be difficult for the railways to run a five-minute service to carry all this traffic as fixed charges are very high and the physical expenses of operation great. Nevertheless, the electrification of suburban services has greatly assuaged the problem of traffic congestion, but it must be remembered that whether it is electrified or not, the railways cannot cover all the routes of a large city. The task of doing this will have to be set to the motor vehicles. The demand for speed is increasing, consequent on the great value attached to leisure. We live in an age of hustle and excitement, in which leisure is becoming an ephemeral thing. The strength of a civilisation depends upon the use to which leisure is put. The businessman from his office or the shop assistant from his sales department needs some hours of rest and quiet to recoup him and to enable him to appreciate the finer things of life. This would be possible only if a quick service were available, else he would have to wait at the kerbside cursing the authorities, and his cup of bitterness would fill to overflowing when a bus or two pass the stop without stopping, with the board, "car full", up. As Fenelon says 'To the vast army of city workers rapid and cheap transit is a great boon, while any unnecessary delay or increased cost is a heavy burden. Slow transport automatically reduces the leisure time of the citizen. Cheap and good transport makes for health and decentralisation.'⁹

Urban transport apart, the motor vehicle is best adapted to the rural areas which can bear only a light rate. The motor vehicle can very well thrive on a light traffic and it can, by adjusting its time table, get as heavy a load factor as it could. The first thing that any transport undertaking should do is to get all the traffic it can. It would

9 K. G. Fenelon: *Economics of Road Transport*.

Road-Rail Transport

be enabled to maximise traffic by quoting low rates. Traffic has first to be got and nursed, before it could be made permanent. In the rural areas, passenger traffic is sparse, and to build either a railway or a tramway would be out of the question. A road motor vehicle would answer the purpose best. These rural services could act as feeders to the railways, giving the inhabitants of the villages the benefits of railway travel, and the railway the advantage of increased receipts. Rightly viewed and properly organised, the motor vehicle cannot be anything but complementary to the railways. They serve a much needed want to the country, and should, instead of reducing railway earnings, actually go to increase them. The main function of the motor vehicle should be to serve the outlying areas of the country. In our study of branch railway policy we saw that a railway by its very nature cannot be made to serve a poor agricultural area, because the traffic being light, the rates would have to be fixed high enough. The Mitchell-Kirkness Committee appreciated the truth of this when it made a searching examination of the various proposals for branch line construction. It held the view that such schemes should be dropped where there was the possibility of a road service adequately meeting the requirements or where the existing road services adequately served the purpose.¹⁰

In urban transport, the tramways play an important part, intermediary between the suburban railways and the road motor. The tramways, like the railways, have not the flexibility of the road. The capital costs in this case are also very heavy, and fixed charges form a great percentage of total working expenses. The tramways are under legal disabilities, as they are required by Statute not only to maintain their running track, but also the road on which it is laid. Section 28 of the English Act of 1870 ordains

10 *Vide* Mitchell-Kirkness Committee Report, p. 111.

The Economy of Motor Transport

that they “ shall at their own expense at all times maintain and keep in good condition and repair, with such materials and in such manner as the road authority shall direct and to their satisfaction, so much of any road whereon any tramway belonging to them is laid as lies between the tramway and (where two tramways are laid by the same promoters in any road at a distance of not more than 4 feet from each other) the portion of the road between the tramways and in every case so much of the road as extends 18 inches beyond the rails of and on each side of any such tramway.” In the Continental countries of Belgium, France and Germany, the tramway is used for the carriage of goods traffic. The possibilities of such traffic are not great, because of the concomitant expenditure—sidings and depot construction, etc. In the large cities of India like Bombay, Madras and Calcutta, the main function of the tramway is to cater to passenger traffic. The tramway systems of Bombay and Calcutta are the finest in India and afford a quick means of locomotion. On the Calcutta tramways there are two classes first and second. The former has upholstered seats and gives the maximum of comfort. The running track is laid on oneside of the broad roads for which Calcutta is justly famous. In Bombay and Madras, however, the track lies in the middle of the road causing some difficulty to vehicular traffic. Bombay provides double decker tramways, which are very comfortable. The tramways offer the cheapest means of urban transport though they are not as speedy as the omnibuses. Their position is intermediary between the railways and the motor bus. The tramways have neither the mobility of the ‘ buses and other road vehicles nor the heavy traffic offering on them. Unlike the railway it has no exclusive right of way and unlike the motor bus it is confined to movement along a fixed route.’ ¹¹

¹¹ For a fuller exposition see Fenelon's “Transport Coordination”.

Road-Rail Transport

Nevertheless, as E. S. Ranger says, “ Tramways are and will remain a necessity in large towns and cities. There is no form of road transport that can deal with mass passenger traffic as cheaply and effectively as tramways. They fill the gap between motor transport and underground railways, as the motor vehicle fills the gap between the tramcar and walking.” The great merit of the tram is that it has a large capacity and is therefore capable of having a high load factor. During the rush hours it is unrivalled as a means of conveyance and allows a good deal of ‘ strap hanging.’ In Madras, there were in 1935, 16 miles of tramways of which $9\frac{1}{2}$ miles were double tracked. The traffic on these has been constantly increasing inspite of the acute competition of the road motor vehicles. The following figures for representative years show the actual distance run, the number of passengers carried, the number of cars possessed by the ‘ Madras Electric Tramways Co. Ltd., and the average number of vehicles used daily.’¹²

Year.	Distance run.	Passengers.	Cars in possession.	Average No. used daily.
	(in thousands).	(in thousands).		
1924-25	2,119	17,203	88	63
1925-26	2,096	15,510	88	66
1926-27	2,009	10,084	88	63
1927-28	2,371	12,759	92	72
1928-29	2,466	19,568	95	78
1932-33	2,866	28,394	100	85
1933-34	2,958	28,723	100	88
1934-35	2,944	28,476	100	88

In addition to these, the Company ran 35 buses in 1926-27. Since 1934, the bus competition has been specially acute and has accounted for a reduction in the number both of passengers and mileage in 1934-35. In large metropolitan cities like Bombay and Madras, the suburban railway lines

¹² Madras Administration Reports.

The Economy of Motor Transport

have been electrified to meet the increasing pressure on traffic. The year 1926 marks an epoch in Indian Railway history as the first line of 29.9 miles was opened on the G. I. P. Railway. The total number of passengers carried in that year was 16.22 millions and in the succeeding year it was 27.36. In 1928-29, the B. B. & C. I. opened its first electrical system with a route mileage of 22.5 miles. In 1930-31 the route mileage on the G. I. P. rose to 181.70. In 1931-32 the S. I. R. followed suit by electrifying the line between Tambaram and Madras Beach. The number of passengers carried in 1937-38 on this system was 8.27 millions on a route mileage of 18.14. A detailed statement of these statistics for all three systems is found in the Appendices. The relative economy of working electric as against steam railways have already been referred to. The average cost per train-mile on the S. I. R. in 1937 was only 0.5 pie, and per passenger-mile it was only 1.64. On the G. I. P. the corresponding figures in the same year were 1.10 and 3.02 pices per mile respectively. Needless to say, an electric railway is economic to run. But it must be remembered that the capital costs are much higher, because of the entailing expenditure on overhead wires, feeders and stations. The electric railways are more easy to operate since they are capable of traction both ways without there being any necessity for reversing. The possibilities of extending the S. I. Railway line as far as Chingleput have been engaging the attention of the authorities. This would depend upon the availability of cheap electric power and the possibilities of getting traffic. The scope is great, for, as the Chief Engineer¹³ to the Madras Government said, our consumption of electricity is the lowest on record being about 7 units per

13 Sir H. G. Howard: Some aspects of Electric Development in the Madras Presidency—Annamalai University Research Journal.

Road-Rail Transport

head. Mysore has an average *per capita* consumption of 37 units! Nevertheless, it must be confessed that for its efficient and successful working, the electric railways need heavy incessant traffic and are therefore, by their very nature suited only for large metropolitan towns. Even Calcutta does not have this! It is unnecessary to stress this point further. While they are an important means of conveyance in congested localities, electric railways can have no place in a nation-wide system of transport. The fact that there are only 98·93 miles of route in the whole of India bears this out.

So we are inevitably led to the conclusion that in the roads lies our ultimate salvation. We cannot afford to neglect them as we have. Though the dragon of un-economic competition has to be exterminated at all costs, motor transport must be protected. It can adequately serve the needs of the country. The validity of this statement is obvious from the following figures, which tell their own tale:—

NUMBER OF VEHICLES IN INDIA AND MADRAS PRESIDENCY AND CITY.

	Total All India.	Total Madras City.	Total Madras Presidency (excluding City).
1929-30	1,92,690	15,931	15,230
1931-32	2,10,726	18,096	15,728
1933-34	2,02,960	19,741	14,675
1935-36	1,61,812	5,296	16,291
1937-38	1,46,429	6,680	15,110

The first three years' figures refer to the number of cars registered, whereas the last two *viz.* for 1935-36 and 1937-38 refer to the actual number of vehicles running. Comparing the figures for these two years, we note a marked fall in the figures for All-India and for the Madras Presidency (excluding Madras City). This may be attributable to the stringent control of motor vehicles exercised in the various provinces in recent years. This is

borne out by the fact that, whereas in 1935-36 there were 6,433 motor freight vehicles and buses, in 1937-38 there were 4,548 in this Presidency. There was a like decrease in the figures for motor cycles and scooters.

While measures of control are essential, the taxation and control should not be so rigid as to drive the vehicles off the road or to crush them out of existence. They have a great part to play in this country, especially in our rural economy. They alone can serve to link up the rural areas with the market towns and the large industrial cities. Being cheap to run, they are ideal for the conveyance of light traffic at low rates so as to enable the agriculturist to avail himself of the marketing facilities. It would appear that in Scotland such rural services are facilitated by allowing a mixed carriage of mails, passengers and goods. Even within the cities, the increasing use of vans for the distributive services augurs well for the future of the industry. The scope for research in this direction is infinite. The use of containers and vans by Agricultural Co-operative Societies and the introduction of Rural Motor Express Services, as in America, are lines along which development could be expedited. As the Salter Committee aptly remarks, "There is room for a scientific enquiry, in the light of the experience of other countries and the special conditions of traffic in this country, as to the most economic form of transport for each class of goods—e.g. upto what distance in each case road transport is the most economical, and beyond what point railway transport becomes so, the best use and development of standardized containers and transshipment under different conditions, etc., such an experience being ancillary to the practical experience of those engaged in the transport industry itself." ¹⁴

. 14 Report of the Conference on Road and Rail Transport p. 40.

CHAPTER VIII

TRANSPORTATION COSTS—A STUDY.

THE cost of operation on the road, we have observed, is much less than that on the railways because of the lower capital expenditure. The capital expenditure of road transport consists, firstly, of the capital cost of the vehicle or vehicles; secondly, of the costs of buildings, *i.e.*, garages, stands and offices; and, lastly, miscellaneous property such as tools and machinery. The running costs are small because of the lightness of the vehicle as compared to the locomotive and the higher load factor. The great advantage of a road motor lies in the fact that it has the option of operating the best paying routes and, that too, during periods when the traffic is highest. The timings and number of services in a road undertaking can be suited to meet the traffic flow. During slack times, if it is found that the traffic will not pay even running expenses and part of the fixed charges, the service may be curtailed. If, on the other hand, the route ceases to pay, either because of a duplication of concerns serving it, or a multiplication of other routes, the motor vehicle can easily switch off to another. There is great ease and mobility in the operation of road transport. A survey of the State Transport System of Travancore has been undertaken and the investigations cover the first six months of its operation. The survey was conducted in May 1939. The United Motors Service of Coimbatore also was surveyed in July of the same year, but the information gathered refers mainly to administration. The U. M. S. is a shareholders' concern wherein a number of concerns have been amalgamated together. The company refused to disclose its capital position or its profit and loss statements. Nevertheless, some useful information regarding running costs and working expenses have been made available. In the successive chapters, a complete but short survey of the working of these services is made. In addition to these, the Hyderabad

State Transport System has also been reviewed so as to afford a basis of comparison with the Travancore System. The authorities of H. E. H. The Nizam's State were approached with a request for help in this matter and permission was sought to undertake a survey. The authorities courteously sent some bulletins and Railway Reports stating that all the information desired could be had therefrom. Lastly, there is a brief sketch of the London Passenger Transport Board. The magnitude of the scheme would serve both as a foil to these undertakings and as an object lesson to them. In the following pages a study of the capital and working expenses of motor transportation is attempted. The calculations are based on the data collected mainly from these sources.

The capital expenses of a single one-man unit, *i.e.*, where the person owns a bus and drives it himself, is necessarily very small. The only capital expense that he has to incur is the cost of the vehicle which might vary from Rs. 3,000 to Rs. 4,000. He has no offices to maintain, since his house serves as his office. There are no workshops to be constructed, because the number of vehicles, which may not exceed two or three, does not justify it. Thus, of the three heads of capital expenditure referred to above, *viz.*, cost of vehicle, buildings and miscellaneous property, he has to incur expenditure only under the first head. But, where the organisation is big and stable and is run either on monopolistic or competitive lines the expenditure under capital has necessarily to increase. A glance at the capital expenditure of the London Passenger Transport System shows how large this could be.¹ It may be noted, however, that this combine consists of all transport undertakings serving the London Passenger Transport Area of 1896 square miles, and covering nine counties with a population of ten millions. When the various

1 *Vide* Appendices E. 1 to 4.

Road-Rail Transport

concerns that were privately operating in this area were brought under the control of the Board, they had to be bought off, and the payments in respect of transferred or acquired undertakings alone accounted for £110,176,486. The capital expenditure in 1934 was £111,575,969 and in 1938 it rose to £131,281,061, thus registering an increase of 19,705,092. Similarly, the figures for the provision of renewals rose from £2,020,500 to £2,425,000 in the corresponding period.

The capital expenditure of the Travancore State Service is equally noteworthy. The London Transport Board consists of all modes of transport undertakings, *viz.*, trolly-buses, omnibuses, tramways and tube railways—whereas in Travancore, the State has monopolised only the road-transport on a few of the most important routes in Travancore. Nevertheless, for operating a fleet of 54 buses, the capital expenditure entailed was to the tune of six lakhs of rupees. The following items constituted the expenditure:—*

	Rs.	ch.	c.
1. Rolling stock ..	4,12,389	0	15
2. Buildings ..	1,31,317	10	10
3. Plant & Machinery ..	17,741	16	11
4. Preliminary expenses.	20,556	21	0
5. Share of Establishment adjusted by P.W.D.	19,903	0	0
6. Miscellaneous & Tools.	1,180	24	4
Total ..	6,03,088	17	8

It will be seen that the largest item is rolling stock. Sixty chasses were brought down of which 54 were operating on the road. The average cost per bus would therefore come to nearly seven thousand rupees. All these buses are fitted with costly Perkins Diesel Oil engines. Buildings account for less than a fourth, and the other

* *Vide* Appendix C. 8.

Transportation Costs

four items together account for nearly a ninth of the total capital expenditure. Similarly, the capital expenditure on the combined Transport System of the State of Hyderabad, during 1938 alone, was Rs. 9.70 lakhs. The total capital at charge was Rs. 15.13 crores, of which the railway share was Rs. 14.54 crores, the share of the roads 58 lakhs and that of the Air Department, one lakh of rupees.

Turning to working expenses, these are again high for a large establishment. To the one-man concern, working expenses consist of actual costs of operation, tolls, taxes and licence fees. For large undertakings, the cost of office establishment, payments to staff and a number of other expenses have to be met. For the London Transport Board, the working expenses for 1938 were as follows:—

Head.	Amount.	Per cent of total.
	£	
Salaries & Wages ..	16,704,937	67.0
Benevolent Funds, Pensions etc.	399,977	1.6
National Insurance ..	285,825	1.2
Total payments in respect of Staff.	17,390,739	69.8
Rates, Taxes (other than income tax) Licensed Vehicle Duty, Licensing fees and Duty on		
Petrol & other Fuel ..	2,770,233	11.1
Electric Current ..	1,713,073	6.9
Tyres, Stores & Supplies ..	1,988,930	8.0
Other charges & Expenses ..	1,060,281	4.1
Total ..	24,923,256	100.0

It is difficult to obtain accurate statistics regarding the working expenses of small concerns. Most of these are not in the habit of maintaining accounts at all. They seem to follow some crude principle whereby a credit is indicative of success and a debit, of failure. As a large

Road-Rail Transport

majority of these are owner-driven, no expenditure in regard to driver's wages is incurred. Usually, however, the wages of a driver may be anything between Rs. 25 and Rs. 60 depending upon efficiency and length of service. Messrs. Gadgil and Gogate of the Gokhale Institute, who undertook in 1935 a field survey of six districts of the Bombay Presidency, remark on this lamentable lack of statistics which unfortunately persists to this day. Their remarks are worth quoting:—"One of the most important objects of our enquiry was to ascertain, if possible, the economic condition of those in the industry. The question whether the roads are at present overcrowded, and there exists an enormous amount of wasteful competition, and the question whether the organisation of the units in the business is economic or not could, we thought, be best tackled by way of an enquiry of this type. We, therefore, attempted to get as complete statistics regarding actuals of receipts and expenditure of bus-owners and as detailed information on all questions regarding transportation costs as possible. It must be admitted at the very outset that the results of the enquiry in the shape of data obtained are very meagre. They do not enable us with any confidence to lay down definite conclusions regarding the prevailing rates of profits or losses, etc." ²

In the investigations made here adequate figures for the two organisations surveyed have been collected. The statistics pertaining to the United Motors refer to different dates, as also to different buses. But under each statement full figures regarding mileage, fuel and oil, tyres and tubes and collections are available. The following table is an abstract of the different statements appended at the end of this volume.

From the statement on the next page it will be obvious that the statistics are comprehensive enough. They refer

2 A Survey of Motor Bus Transportation, p. 82.

WEEKLY STATEMENT OF RUNNING EXPENSES AND COLLECTION.

Serial No.	Miles.	Petrol.	Oil and Grease.	Petrol cost.	Oil & Grease cost.		Tyres & tubes.	Spare parts.		Batta.		Total Expenses.		Total Collection.										
					RS.	A. P.		RS.	A. P.	RS.	A. P.	RS.	A. P.		RS.	A. P.								
1.	896	57	14	80	2	6	3	12	0	..	1	10	6	10	14	6	96	8	6	279	5	0		
2.	1024	67	14	94	3	6	4	5	6	..	..	13	7	6	112	0	6	343	1	0				
3.	768	48	14	67	8	0	1	5	6	..	..	7	10	6	76	8	0	203	0	0				
4.	4456	322	94	152	13	0	27	12	0	..	83	4	0	54	6	6	618	3	6	2,036	7	0		
5.	4800	361	104	507	1	6	30	7	9	99	14	0	142	6	0	55	2	0	835	8	3	2,102	11	0
6.	4850	350	104	492	3	0	28	3	6	99	6	0	181	1	0	52	10	6	853	8	0	1,987	3	0
7.	3600	261	94	367	0	6	26	3	3	89	3	0	187	9	0	40	8	0	710	7	9	1,526	8	0
8.	900	60	54	84	6	0	6	3	0	..	..	4	5	0	7	8	6	102	6	6	231	4	6	

Road-Rail Transport

to weekly periods and that explains how in certain weeks there are no expenses under tyres and tubes. Figures under this head are available for three weeks. For these weeks, the expenses under spare parts are also shown, thus indicating that the vehicles were either overhauled completely or they sustained some breakdowns. But, in view of the fact that the expenditure under tyres and tubes show great correspondence, as also those for spare parts, the cause must be set down to overhauling. A study of the mileage consumption shows that the mileage return varies between 14 and 15 miles per gallon. This is in accordance with the 16 miles estimated by Messrs. Gadgil and Gogate. They say that generally the mileage per gallon varied between 16 and 18. In some cases the particularly bad state of the bus was responsible for a higher consumption, and in others the bad roads were responsible. Generally speaking, the main routes in the Coimbatore District operated by the U. M. S. are fairly good, though there are certain stretches, where the bus route deviates from the main roads, which are bad enough. The average cost of petrol as deduced from the statistics is approximately Rs. 1-6-6. The average cost of petrol per running mile is about an anna and a half. In the case of the shorter routes the average is 0-1-5 pies whereas on the longer route it is 0-1-7. This may be attributed to the large number of stops on the longer routes and, in consequence, the greater length of time during which the engine is kept running for the passengers to board and alight. This same reason accounts for the fact that whereas on the shorter routes the petrol consumption is a gallon for every 17 miles, on the longer routes it is about 14. The consumption of oil works out variously. In the first two cases, a gallon is consumed for every 700 miles on an average, 716 and 680 to be correct. In the

Transportation Costs

third case the mileage returned is nearly 1500. In the long distance routes—cases 5, 6 and 7—the mileage is much less; it is 450 on an average; or, putting it the other way, this would work out to roughly 1·2 pies per mile taking the average cost of oil at Rs. 2-12-0 per gallon. Turning to the figures for tyres and tubes, we find that for 4800 miles the cost incurred under this head amounts to nearly Rs. 100, which works out to 4 pies per mile. In the second case—serial number 6,—the costs incurred were Rs. 99-6-0 on a mileage of 4850. Here the cost per mile is 3·9 pies and in the last case, the cost works out slightly higher *viz.* 4·7 pies per mile. Examples number 4, 5, 6 and 7 refer to the expenses incurred during the month of November, 1937 on the Pollachy line. For four weeks the total expenses under tyres and tubes amounted to Rs. 288-7-0 *i.e.*, the sum of the figures for 4, 5, 6 and 7 and, at this rate, the rate per mile would work out to exactly 4·2 pies per mile. Taking next the batta charges, these work out to 2·5 pies per mile on an average. The expenditure under spare parts varies; in example No. 7, the expenses work out to 10 pies per mile whereas in the first case it is only 0·4 pie per mile. Taking cases 4, 5, 6 and 7, whereunder the expenditure is largest, the average works out to 6·54 pies per mile. The general average for all the cases instanced would come to 4·5 pies. The total working expenses work out to roughly Re. 0-2-9 per running mile. On the Pollachy route—*e.g.s.* 4 to 7—the cost works out to Re. 0-3-1 per mile. This is due to the high expenditure under tyres and tubes and spare parts.

As compared with the Hyderabad service, these figures come out favourably. In Hyderabad the mileage on a petrol passenger bus was only 9·82 and that on a diesel-engine 16. Compare this with the average of fifteen miles

Road-Rail Transport

on this system. The working expenses including contribution to depreciation works out to $5\frac{1}{2}$ annas per vehicle mile. It was not possible to get any but the operating expenses for the U. M. S. due to the reasons stated above. Nevertheless, these figures are useful in demonstrating what the expenses would amount to for any bus properly run. The Travancore State System may be taken for comparison, *cum grano salis*, since the whole fleet there is equipped with diesel engines. The total mileage run on the entire system for the six months ending April, 1939, was nearly 13 lakhs and 70 thousand miles. The total expenses of working amounted to Rs. 2.95 lakhs including appropriation to depreciation and interest on capital. The main items are as follows (in Travancore Currency):—

	Rs.	Ch.	c.
1. Administration, Management & control ..	14,066	9	11
2. Repairs, Renewals & Replacements, Buses and Lorries ..	30,570	4	13
3. Diesel Oil ..	43,127	4	15
4. Other oils & Greases ..	7,263	15	6
5. Tyres ..	65,591	0	15
6. Tolls ..	14,453	0	0

The figures refer to the main heads of expenditure. The expenditure on Diesel Oil is low because of their high mileage return. Rs. 43,130 on a mileage of 13.70 lakhs works out to just 0.5 annas or 6 pies per mile. This verifies the statement that the mileage return from diesel is nearly double that from petrol and that the cost of diesel oil is lower. The share of other oils and greases is Rs. 7,260 which, in its turn, works out to a pie per mile. Tyres and tubes account for the largest single item of

Transportation Costs

expenditure *viz.* Rs. 65,591. Calculating on a mileage basis, this works out at 9 pies per mile. The share of Administration, Management and Control and Repairs, Renewals and Replacements work out to 2 and 4 pies per mile respectively. Tolls are responsible for a further 2 pies per mile.

The average salary of a driver varies between Rs. 20 and Rs. 50. There were 162 of these on the U. M. S. besides conductors on a pay of Rs. 10—20 per month. In Travancore there are regular scales of pay for the various incumbents. There, the starting pay of a driver is Rs. 30 increasing by annual increments of two rupees to Rs. 40. The pay of conductors scale is Rs. 25—1—30. From a study of the existing conditions in this Presidency, Rs. 30 may be taken as a rough basis for drivers and Rs. 15 for conductors. In certain undertakings, usually operating long distance routes, as in North Malabar, the drivers are paid on a daily basis. In the Punalur-Quilon Motor Transport Service, a driver is paid Rs. 1-12-0 per day. Needless to say, as there is no guarantee of continuous employment, the wages have to be sufficiently high. Similarly, for a conductor, the daily wage is 12 annas. There are instances in certain undertakings like the U. M. S. where efficiency is repaid and encouraged by a system of bonuses. In the welcome address presented to Mr. G. T. Boag on the opening of the bus station at Palladam, the Managing Agent of the U. M. S. averred that twenty to thirty thousand rupees are spent annually on bonus.

**STATEMENT OF WORKING EXPENSES AND INCOME OF BUSES IN SIX DISTRICTS OF THE
BOMBAY PRESIDENCY.***

Serial No.	Number of buses.	Mileage of routes operated.	Average miles tra- velled per bus per day.	Total Income.	RS. AS.	RS. AS.	Total Expenditure.	AS. PS.	Average income per bus mile.	AS. PS.	Average cost per mile.	AS. PS.	Petrol cost per mile.	AS. PS.
1.	1	22	70	390 5		438 6		3 0			5 0		1 4	
2.	3	69	140	2,671 15		2,346 5		3 4½			4 0		1 2½	
3.	5	30 36	127	4,563 0		3,092 8		3 10			2 7		1 1	
4.	5	12 50 20	55	2,867 2		2,637 0		5 7			5 2½		2 6½	
5.	10	72 42 20 17	94	9,889 3		6,532 10		5 7			4 3		1 8½	
6.	1†	17	35	442 0		259 0		6 9			4 0		1 2	
7.	1†	32	65	442 0		381 1		3 7			3 0		1 3	

* Table 26 of the Report on Motor Bus Transportation by Messrs. Gadgil and Gogate of the Gokhale Institute, p. 102.

† This indicates that the vehicle was owner-driven.

Transportation Costs

The statement of expenses and receipts of a few concerns operating in the Bombay Presidency, as prepared by the Gokhale Institute of Politics and Economics, is intended to serve as a basis of comparison with the results derived from the investigations undertaken in connection with this study. The average expenditure per bus per mile is found to vary considerably from Re. 0-2-7 to Re. 0-5-2½. Since this expenditure is inclusive of maintenance, taxation, tolls and wages, it would be advisable to study the actual operating expenses for a few of the cases cited overleaf. Details are given as per serial number:—

Serial No.	Total Expenditure.			Petrol.			Lubricants.			Tyres & Tubes.		
	RS.	AS.	P.	RS.	AS.	PS.	RS.	AS.	PS.	RS.	AS.	PS.
1.	438	6	0	178	2	0	12	0	0	100	0	0
5.	6,532	10	0	3,037	8	0	300	0	0	1,666	1	0
4.	2,637	0	0	1,316	4	0	103	0	0	368	8	0
3.	3,092	8	0	1,316	6	0	125	0	0	474	0	0
2.	2,346	5	0	961	14	0	90	0	0	750	0	0
7.	381	1	0	155	14	0	9	0	0	75	0	0

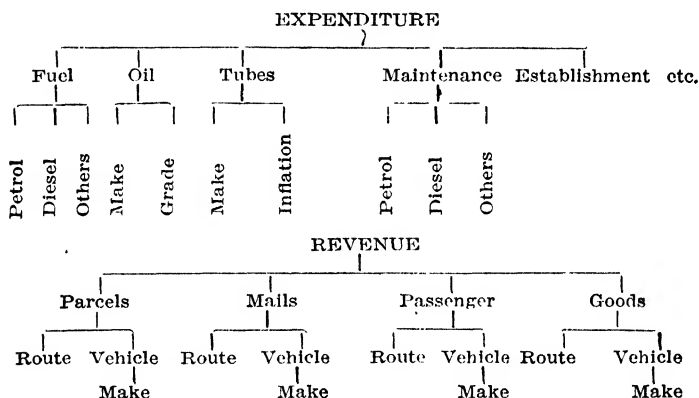
Adopting the procedure followed in the previous case, in judging the incidence of these costs on total expenditure; the petrol costs would form 40·8 per cent of total expenditure in case No. 1. The shares of lubricants and tyres and tubes are 2·7 and 20·5 per cent respectively. In the next example cited above, the corresponding percentages are 46·5, 4·6 and 24 respectively. Calculating the average incidence in these cases, we find that on an average, petrol costs form 44·7 per cent of total expenditure, lubricants 3·6 per cent, and tyres and tubes account for 20·4 per cent. Compared to these figures, the incidence of petrol, oil and tyres and tubes cost on the Pollachy line of the U. M. S. work out to 60·3, 3·7 and 9·5 per cent respectively. The calculation on a percentage basis is contrary to business practice and it causes some surprise that the learned authors who conducted the survey did not collect the figures for the total mileage operated and reduce costs to a "per mile basis." The one

Road-Rail Transport

important feature of these statistics should be to reduce everything to a mileage basis. There is no point in lumping together these figures under such heads—total costs, total petrol consumption, tyres, maintenance and staff—as aggregate figures. In a long discussion with a leading statistician on the staff of one of the largest services operating in the metropolitan area of Madras, it was seen that there were few concerns that maintained adequate and exact statistics pertaining to the working of the services. However, it is felt that this criticism cannot be made in the case of the Travancore and Coimbatore surveys conducted here. The importance of correct and adequate statistics can hardly be over-emphasised, and it should be the real aim of these to point out exactly the income and cost per mile so as to enable the determination of the operating ratio.

In the matter of maintenance of statistics, the railways offer an example that is worth copying with profit. There is no reason why such statistics of vital importance should not be possible in the case of road transport. The superiority of a "per-mile" calculation over a "total per cent" calculation lies in this. There are, in the running of any service, a number of miles that are "dead," yielding no return. This might be either due to the fact that there has been some breakdown somewhere, in which case the return haul has to be empty, or that no traffic is offering on the return journey. Apart from dead mileage, deductions have to be made for service mileage—as on trial runs or journeys from and to the garage, etc. It is only when deductions have been made on both these counts that the actual paying mileage could be arrived at. In the absence of such exact figures, it would be a fallacy, as is actually done, to credit the total earnings to the total mileage run. A more elaborate method of cost accounting could be suggested, but normally

important statistics of the nature described will suffice. If more detailed statistics were necessary, the method to be adopted would be similar to that of casting genealogical tables. Under a given general heading, say total expenditure, we ought to get expenditure for each item *e.g.*, petrol, oil, tyres and tubes, maintenance, etc.; and under each head there must be data for each make and grade of vehicle. So too under gross revenue, the receipts from each form of transport, *viz.*, parcels, goods, passenger, postal mails, etc. should be clearly indicated and under each of these heads, receipts per route and per vehicle should be stated. Thus, figures for each type and make of vehicle could be collected. The data could be brought under some such statement like this:—



An item of expenditure that is not usually disclosed in the statement of running expenses is the agency commission. In mufussal towns, there are regular canvassers employed for getting traffic for particular buses. This practice is quite common. Messrs. Gadgil and Gogate find this equally prevalent in the Bombay Presidency. They say: “The Agent’s Commission is in a sense also a running cost—all passenger traffic is secured through agents who charge a fixed percentage of the fares—usually

Road-Rail Transport

an anna in the rupee—as their commission.”³ During the investigations we found that the Commission is not on a percentage basis but is a fixed sum; usually 4 annas per day.. On an average it would work out to about 4 per cent of receipts.

Depreciation. With regard to depreciation, information was available only in the case of the Travancore State System and Hyderabad. In the latter, the contribution to depreciation is not shown as such, but figures relating to working expenses inclusive and exclusive of this are shown, so that by a process of subtraction it is possible to arrive at the figure. The following table is intended to show the depreciation expenses and the capital at charge for the Hyderabad Road Transport Department since its inception :—

HYDERABAD ROAD TRANSPORT SYSTEM.

Year.	Capital at charge.	Contribution to Depreciation.	Percentage of (3) to (2).
(1)	(2)	(3)	(4)
1932	4,19,473	39,456	9.4
1933	7,47,125	1,07,011	14.3
1934	15,62,600	2,02,392	12.9
1935	22,50,696	2,66,607	13.0
1936	54,54,536	5,76,911	10.86
1937	55,75,501	7,79,818	14.3
1938	58,14,508	7,98,252	13.38

The percentage of contribution to capital at charge shows variations for the various years. In the first year, since all the vehicles were new, the contribution is only 9.4 per cent. In 1936, again, there has been a fall because of the great enlargement in the fleet from 137 to 318. Similarly, the lower figures in 1934 and 1935, as compared to 1933, is due to additions of 40 and 35 vehicles to the fleet. The rate of depreciation is not given in the report but it could be calculated this way. The first year's figures may be taken as base, since in the subsequent years

3 A Survey of Motor Bus Transportation, p. 91.

Transportation Costs

there have been additions of new rolling stock to the old stock, it would not be possible to calculate accurately. In 1932 there were 30 vehicles and the depreciation expenses work out to slightly over Rs. 1,200 for a new vehicle. It must, however, be remembered that depreciation expenses consist not only of depreciation of rolling stock, but of such other fixed assets as machinery, buildings, etc. Since figures are not shown separately for each of these, we will have to accept the total depreciation figures.

If, however, the Travancore System were taken up for study, it would be found that exact figures are available. The depreciation expenses are given under each head. The depreciation allowed on buildings is 5 per cent; on tools and plant 15; on " Bell-Punch " ticket machines 20, and on rolling stock 25 per cent. Twenty-five per cent can be accepted as a reasonable figure and is the rate adopted on all American Transport Systems. The depreciation expenses for the Travancore State System for the first year of operation were as follows:—

	Rs.*
1. On Buildings @ 5%	1,599
2. On Rolling Stock @ 25%	44,226
3. On Ticket Machines @ 20%	470
4. On Tools and Plant @ 15%	130
5. On Furniture @ 7½%	22
	<hr/>
Total ..	46,447
	<hr/>

The total working expenditure of the whole undertaking was Rs. 2.95 lakhs of which it is seen depreciation expenses alone account for Rs. 46.5 thousands. This works out to 15.7 per cent of total expenses. The specific share of rolling stock amounts to almost exactly 15 per cent. The depreciation was on 51 vehicles which were

* N.B.—A Travancore rupee is nearly 0.98 of a British rupee.

Road-Rail Transport

running at the end of the Malayalee year 1113 (*i.e.* April, 1939). The depreciation per bus would therefore be nearly Rs. 900. But, in view of the fact that there were 54 on the line in the course of the six months under review, the appropriation per bus will have to be less *viz.*, about Rs. 830. These buses, it must be remembered, are run on Diesel oil. More than anything else, the fact that these figures refer only to a half-yearly period must not be lost sight of. Multiplying these figures by two, we find that the depreciation per bus is Rs. 1,650 per annum.

In the Madras Provincial Report submitted to Messrs. Mitchell and Kirkness, the life of a Chevrolet 20 cwt. bus costing Rs. 3,500 has been estimated at 3 years. At this rate, exclusive of tyres, the depreciation per bus is fixed at Rs. 1,166. The figure we arrived at *viz.* Rs. 1,650 also refers to a bus of similar seating capacity, but the higher cost is due to the greater cost of a Diesel engine-vehicle which amounts to Rs. 7,000 at the least. Three years are rather too short a period to be taken for the average life of a bus. Usually five years are taken as the maximum, but four years, as in the case of Travancore and America, may be taken as quite normal. There is, however, no uniformity of procedure adopted. The authority that certifies the road-worthiness of a vehicle is the licensing authority and, from the views expressed by them, they do not seem to be guided by any hard and fast rules. The Secretary of the Trichinopoly Branch of the Road Transport Board said:—

“ The practice followed in this district is like this. When the Officer inspecting a transport vehicle considers it beyond reasonable repairs by reason of undue wear of vital parts and unfit for public service, certificates of fitness will be refused.”

“ When, however, repairs and replacements have been satisfactorily made, but the officer is of the opinion after

thorough inspection that the vehicle cannot be expected to serve much longer than about 6 months, a last certificate of fitness is usually issued mentioning therein "last certificate" or "not likely to be passed again," "No further certificate will be granted," etc. to serve as a notice to the owner; and after such period the vehicles are not generally produced and their certificates, not renewed. The owners get the permits cancelled and replace the vehicles." ⁴

Depreciation is greatest in the case of the small concerns, mostly owner driven vehicles, since there are no spare vehicles and those on the roads are worked to the greatest possible extent. This sort of practice is to be found mostly in the mofussil and rural areas where persons with small capital, purchase a vehicle, either on the hire purchase system or by paying spot-cash, and take to the road. It would appear that in the Konkan and other districts of the Bombay Presidency, there are instances in which the owner-driver works his vehicle for 350 days of the year. The average life of a bus there is estimated at $4\frac{1}{2}$ years.⁵ During the investigations, it was pointed out by responsible persons belonging to this industry, both at Coimbatore and Madras, that the actual life of a bus would be not less than ten years. Of course, this depends to a large extent upon the conditions under which it is worked, the frequency of services operated, the traffic offering and, above all, on the nature of the road and the driver. Normally, a vehicle may last for ten years, but the present Police restrictions are detrimental to transport interests, since they rigidly fix four years for its life. Road motor transport is increasingly becoming difficult because of the number of restrictions placed upon its

⁴ Letter from the Secretary, Trichy Branch, Road Transport Board to the U. M. S., Coimbatore.

⁵ Survey undertaken by Gadgil and Gogate.

Road-Rail Transport

working. Insurance of buses would mean further expenditure. At present, there are no regulations making third-party and vehicle insurance compulsory. Even in the Native State of Travancore the vehicles are not insured, but an Insurance Reserve Fund has been created to which a sum of Rs. 200 per bus per year is allocated. The advantages of this system are that the payments that would be made in the shape of premia are conserved and created into a Fund, the proceeds of which would be available whenever necessary. Moreover, practical experience and the low accident figures—in fact there have been no serious accident during the period of its working—dictate such a policy. Third-party insurance is to be made compulsory in the Madras Presidency from 1942 onwards.

Taxation. We have hitherto been considering the running expenses and other charges, but taxation of motor vehicles has been the ground for serious complaint from all quarters. Messrs. Mitchell and Kirkness during their investigations into the question were appraised of the regressive effects of these. The taxation of motor vehicles has been recognised as a just form of revenue. They are a necessary levy, since the motor vehicles use the roads and, as such, should contribute towards the maintenance and upkeep of the roads. There are a number of ways in which they could be taxed. They are (1) Driving Licence, (2) Licences fees, (3) Oil and fuel taxes, (4) Petrol tax and (5) Tolls. Of these taxes, those that are directly paid by the transport agencies are the licence fees, tolls and vehicle tax. The licence fee comes first, since every vehicle has to be registered before it could operate on the road. The registration fee at the time of purchase is Rs. 16 and on renewal Rs. 3-3-0. The initial payment for a G. Permit to run a vehicle costs Rs. 16 and for every renewal thereof, Rs. 8. If the permit is not

Transportation Costs

renewed within the specified time, it would be treated as a fresh permit. Usually, requests for renewal of permits have to be made a month in advance of the due-date. A few years back, however, the rules were quite lax, and it was customary for licencees to pay their renewal fees on the day prior to the due date and to send the chalan to the licensing authority who is the District Superintendent of Police for the districts and the Commissioner of Police for the Metropolitan area. Now that the new Motor Vehicles Regulation Rules have to come into operation, all permits will have to be renewed as from 1-4-1940. Since there might be a number of permits that might be maturing at various dates, the Road Transport Board has issued instructions for the collection of dues on the following basis :—⁶

	Rs.
1. Where the unexpired period exceeds 9 months.	2
2. Where the unexpired period is more than six months but does not exceed 9 months ..	4
3. Where the unexpired period exceeds 3 months but does not exceed 6 months	6
4. Where the unexpired period is less than 3 months	8
(The fee charged for a change of licence is Rs. 2.)	

Prior to 1931, the District and Local Boards were levying tolls at various rates, the most general being a rupee per toll. These tolls were regressive in their effects as the charge was for a period of 24 hours. Even the most superficial observer will notice that this was not proportionate to the use of the road. To take an example, it might so happen that a particular vehicle is journeying from Madras to Chidambaram in doing which it would be passing a number of districts and municipalities. Each one of these would then levy its toll whereas it would be

⁶ Circular notice issued by the Secretary, R. T. B., South Arcot, to all motor vehicle owners.

Road-Rail Transport

just passing them only once on its way forward ; possibly twice if it were to do the return journey on the same day. But the regular road hauler and passenger bus would be plying on those roads a number of times by paying just the same amount. It was therefore thought that this was iniquitous and tolls were therefore abolished in 1931 in this Presidency.

The effect of the new Act was to do away with all the existing tolls and to prohibit their levy by any district or municipality, on any vehicle or animal. In the event, however, of the Government constructing any bridge or road it was entitled to make a temporary levy till such time as the costs were recovered. In any case, the local bodies were deprived of the right of exercising these powers, since the levy was restricted to those constructions that were financed at the expense of the Provincial Government. Obviously, when expenditure was financed by the local authority, the latter had no power to levy a rate. This was thought unjust since it sought to make an invidious distinction between works undertaken at provincial and at local expense. So in 1938, a new Act was passed amending the Indian Tolls Act of 1851 and the Motor Vehicles Taxation Act of 1931. Under the new Act, it was empowered that the Provincial Government may levy a toll on any road or bridge constructed either wholly or partly at the expense of the Provincial Government. The rate at which this should be charged was to be determined by the Provincial Government and it was specially mentioned that the toll was to be only a temporary levy intended to repay the cost incurred. Thus, apart from this power to levy a rate on works undertaken after 1st April, 1931, there are no tolls levied on the use of the road.

The abolition of tolls has resulted in great good to the regular road operators and has facilitated long distance

motor travel. It is the private family-car that has proved to be the most serious competitor to the railways in America and the United Kingdom. There were 25,814,103 motor vehicles in the United States in 1931, representing 75 per cent of the total for the world, which worked out at one vehicle for every five of the population.⁷ The world average is one in 57 and that for India, is nearly 1 in 2000 or .05 per cent. The abolition of tolls thus reduced the road bill of long distance motorists and, by doing so, has tended to decrease railway receipts. But due to the low ratio of private cars to population, in India this does not offer serious cause for apprehension. It was the regular road operator that stood to gain. For example, a motor vehicle running between Chidambaram and Vriddhachalam—a distance of 28 miles—had to pay Rs. 6 per day in the shape of tolls only. This alone, therefore, swelled his daily bill and it is only the abolition of tolls that has eased the situation.

While the motor vehicles have stood to benefit by the abolition of tolls, there has been considerable loss of revenue due to the bullock carts contributing nothing to the upkeep of roads. The loss estimated was Rs. 25 to Rs. 30 lakhs. As the Madras Branch of the Indian Roads and Transport Development Association stated, “the reason that this valuable revenue was dropped was a political one, and ostensibly it was an endeavour to reduce the burden on the alleged poor agriculturist.” Complete exemption of the bullock cart is unfair, since the other vehicles have to bear the maintenance and upkeep costs for the repairs necessitated by these carts. These vehicles fitted with narrow iron-tyred wheels are most destructive to the roads since they tend to cut up the roads into ruts and ridges. A combination of bullock cart and motor traffic, it is said by road experts, is more detrimental than either

7 Road and Rail in Forty Countries, p. 6.

Road-Rail Transport

singly. Some improvement could be effected if the width of the tyre were increased. But this would considerably increase the friction to be overcome, due to greater weight, and cause serious inconvenience to the animals. The only alternative would be pneumatic tyres. District Boards would find it possible to maintain roads only if the wear and tear caused by these vehicles is minimised. In 1937 the estimated number of these was eight and half millions. The extent of damage done by them can therefore be easily imagined. The Government of Travancore also investigated into this problem. The difficulty of converting a large number of carts into pneumatic wheeled vehicles lay in its enormous cost. When a leading Congressman who holds a very responsible position in the All-India Spinning and Industrial Association was asked about this, he denounced the suggestion as it would increase the operating costs of the poor agriculturist. If pneumatic tyres were made compulsory then, not only would the cost of fitting a cart with these be very great—the present cost of a front wheel tyre for a bus is nearly Rs. 75—but also the agriculturist would be made to make a recurring contribution to the general revenues by way of payment of the tax on tyres. Thus, the wear of the tyres would represent increased contribution to revenue. Under modern conditions of agriculture, therefore, this would be financially impossible due to the uneconomic nature of agriculture and the high costs of the conversion to tyres. It could therefore be suggested that fairly broad stretches at either extreme of the road should be reserved for bullock cart traffic while the middle of the road be reserved for motor traffic. In addition to this, a small fee may be charged by the District Board akin to those charged by Municipalities. Again, the centre of the road may be metalled and the two extremes could be good earth roads, cheap to lay and maintain and be reserved for

Transportation Costs

cart traffic. Only then would there be a just appropriation of road maintenance costs between the different road users.

The most important source of taxation is the vehicle tax, the incidence of which is highest in the cost bill of road motor operators. The tax may be according to weight *i.e.*, unladen weight, or to seating capacity. The former basis is adopted in the case of lorries and the latter in the case of buses. There may be three forms of taxation, Central, Provincial or Local. The Central Government exercises its powers by imposing an import duty on motor vehicles, tyres and spare parts and by a tax on petrol.

It was customary for the District and Local Boards till 1938, when the new rules of taxation came into force in this Presidency, to impose a tax in virtue of the powers vested in them, in addition to the provincial tax. By the Taxation Act of 1931 the tax on a four-seater vehicle plying for hire was Rs. 30 and for every additional person which the vehicle was licensed to carry Rs. 7-8-0, per quarter. Thus the annual quarterly tax for a 15 seater bus was Rs. 450 per annum and on a 23 seater passenger vehicle, Rs. 690. It should be specifically stated here that no exemption was made in the case of the driver and conductor. Similarly, the tax on a lorry ranged between Rs. 75 and Rs. 275 for vehicles whose unladen weight was between 15 and 100 cwt. Additional to these was the District tax which was, on an average, Rs. 1,130 per annum, making a total quarterly tax burden of Rs. 972-8-0 per bus of a seating capacity of 23. The Mitchell-Kirkness report, on this basis, estimated the tax burden at 16% of the operating expenses of a 20 seater bus. Their figures are as follows:—⁸

⁸ Mitchell-Kirkness Report, p. 103.

Road-Rail Transport

			Annas per vehicle mile.	
			Total.	Tax Element
Petrol	..	..	1.89	0.72
Lubricants	..	..	0.14	0.02
Tyres	..	..	0.56	0.08
Sundries	..	..	0.07	..
Repairs	..	..	0.42	..
Salaries	..	..	1.89	..
Contingencies, including				
Provincial and Local				
taxes	..	..	0.91	0.20
Depreciation	..	..	0.65	0.06
Miscellaneous	..	..	0.10	..
			<hr/>	<hr/>
			6.63	1.08
			<hr/>	<hr/>

The new maximum quarterly tax for passenger vehicles is Rs. 80 for the first five seats and Rs. 20 per every additional passenger, exclusive of the driver and conductor. Calculating on the present basis, the maximum annual tax on a 23 seater bus works out at Rs. 1,600. It is not always that this rate is adopted since it is only the maximum permissible. Taking as an example the District of Coimbatore, the charge per seat is Rs. 17 which for a 23 seater, means Rs. 357 per quarter or Rs. 1,428 per annum. We might now study the incidence of this tax on running expenses. By running expenses is here meant the actual cost of running the vehicle, *i.e.*, the operating expenses consisting of expenditure on fuel, oil, tyres and tubes, spare parts, batta and other expenses. Taking the Dharapuram-Dindigul line of 45 miles, the operating expenses for 21 days from 3-7-1939 to 23-7-1939 were, in round numbers, Rs. 330. Thus for a whole month it could be expected to be Rs. 500, or Rs. 2,000 for a quarter. The tax per quarter on this bus amounts to Rs. 357, so that the total incidence is about 18 per cent.

Transportation Costs

It must be remembered that this is in comparison with operating expenses only so that, if total running expenses were to be included, the proportion would be less. According to the old rate of taxation i.e. Rs. 690 per quarter, in addition to the District licence fee of Rs. 575 per annum, the total quarterly tax would amount to Rs. 833-12-0. Needless to say, the comparison is most favourable to the present tax for at the old rate, the incidence would have been as high as 41.5 per cent of the operating expenses alone. Calculating on the basis of total collections, we find that the collections on the same route viz., Dharapuram-Dindigul line for the same period of 21 days has been Rs. 613-2-0, which would amount to Rs. 925 per month or in round numbers Rs. 900. The quarterly receipts would, on this basis, amount to Rs. 3,600. The tax per quarter comes to Rs. 360 or 10 per cent of the total receipts. If the mileage basis were to be accepted, the collections would be more precise and have the benefit of reducing the tax element to a mileage basis which alone is the correct method. For the 21 days we have studied, there is a tendency for the bus M. L. 1693 to do alternately 90 and 180 miles per day. Viewed that way, the average monthly mileage would be 3,000 miles which multiplied by 4 would give the quarterly average of 12,000 miles. The tax for the vehicle—a 23 seater—would be Rs. 357 per quarter, which on calculation would amount to 5.75 pies per mile. This is an almost exact calculation since the route mileage is fixed. At the old tax rate, the incidence would have amounted to nearly 14 pies per mile! Allowing for all contingencies, we may take 5½ pies as a very reasonable rate per mile. In other words, 15 per cent of working expenses is a just mode of apportionment.

One other important tax that is not directly felt but contributes considerable revenue is the duty on Petrol. Under the Petroleum Act 1934 of the Central Government,

Road-Rail Transport

the tax on every gallon of petrol imported into India is 10 annas and by the provisions of this Act, no motorist can at any time be in possession of more than 20 gallons of motor spirit. The importance of this tax can be seen from the fact that in 1937 the revenue derived from this source by the Central Government amounted to Rs. 4,62.82 lakhs. In 1938-39 according to the revised estimate, it is Rs. 5,10.00 and the Budget estimate for 1939-40 is Rs. 5,42.00 lakhs. Apart from this Central Duty, the Madras Government in 1938 passed the Petrol Act,* whereby it was to levy an additional Provincial duty of an anna and a half on the retail price of petrol. The Act made it compulsory on the part of every retailer to produce accounts of sales. The estimated income from this source of revenue, together with the duty on electricity was anticipated by the then Premier at Rs. 15.12 lakhs. It will thus be seen that the motor transport industry has to bear a number of taxes, Central and Provincial. The Central Government levies a tax of two and half annas on oil consumed by motor vehicles. The duty on imports of spare parts of motor cars comes to 25 to 37½% as the case may be. The receipts from the following heads are shown as hereunder:—

CENTRAL GOVERNMENT RECEIPTS (IN LAKHS).

	1937-38	1938-39	1939-40
	Actuals.	Budget.	Revised. Budget.
Motor Spirit	4,62.82	5,80.0	5,10.00
Oils, Fuel and Lubricating.	46.86	45.0	43.00
Tyres and Tubes	32.92	35.0	25.00
Motor Cars, Omnibuses chassis vans, etc. and parts thereof	1,68.11	1,70.0	1,25.00

Addition to these are the actual receipts from the taxation of Motor Vehicles by the Central Government amounting to Rs. 3.3 lakhs in 1937; the revised figure for 1938-39 was Rs. 3.26 lakhs.⁹

* *Vide* Madras Sales of Motor Spirit Taxation Act. Budget for 1939-40.

⁹ Figures are compiled from the Budget for 1939-40.

Transportation Costs

The motor industry therefore is a large contributor to the general revenues and is one of the most heavily taxed. We might here represent statistically the taxes, direct and indirect, paid on an average car of the value of Rs. 3,600 spread over a period of five years. It will be assumed for purposes of calculation that the vehicle runs 15,000 miles per annum on an average, *i.e.*, about 40 miles a day. The contributions would be as shown below:—

TAXES PAID BY A PRIVATE MOTOR CAR OF THE VALUE OF Rs. 3,600.

	Per annum.		
	RS.	A.	P.
1. Customs Duty	850	0	0
2. Registration fee at time of purchase	16	0	0
3. Petrol 750 gallons per annum. Central Government tax @ 10 annas per gallon .. ..	..		468 12 0
4. Provincial Government tax under Madras Motor Vehicles Taxation ..	..		100 0 0
5. Oil 20 gallons per annum @ 2½ annas per gallon ..	..		3 2 0
6. Spare parts at, say, an expenditure of Rs. 150 per annum. 25 to 37½% duty thereon .. ..	..		45 0 0
7. Additional tax of 1½ annas per gallon on 750 gallons under new Act ..	..		70 5 0
Total ..	..		<u>860 6 0</u>

It will be seen that in five year's time the amount of taxes paid would have far exceeded its original cost.¹⁰

RATES AND FARES. Before proceeding to the question of profits, we might discuss the problem of rates and fares. The generally accepted view is that where the roads compete with the railways, the rate of fare charged is

¹⁰ Based on figures furnished by the Automobile Association of India.

Road-Rail Transport

much below the economic level. It is the road pirate that is the worst offender in this respect and lack of the elementary principles of economics is responsible for this. The disorganised operator fails to realise that in the rate-cutting war with the railway, he is sure to be worsted because of his weak staying power. Nevertheless, the competition has been so severe that the loss in revenue to the railway has been very considerable and has been estimated in the neighbourhood of four crores of rupees. It is only within the fifty mile zone that the losses are greatest and especially in a small country like Great Britain where the average length of haul is only 60 miles, the loss through competition is very considerable. "In competition with railway transport the scope of the motor goods-vehicle is limited rather by comparative service than by comparative costs."¹¹ In the haulage line, the motor bus concentrates on high class traffic on which the incidence of road rates is very small. Therefore, if a particular undertaking is to survive, it will have to provide the best service under the circumstances. As a consequence, competition within bounds, has the sovereign virtue of making for the betterment of service offered. In the case of passenger transport, the main consideration in favour of road transport is speed and flexibility. Especially is this so in the rural parts where alighting at the desired destination is a great virtue. It will therefore be seen from what follows that where the road alone is the means of transport, the fares are perforce high, and where there is either a competing service or a railway, they are low. A few examples would suffice to elucidate this point.

The fare between Coimbatore and Gobichettipalayam is 12 annas for a distance of 54 miles, which is a very low rate working out at $2\frac{1}{2}$ pies per mile. Needless to

11 The Problem of Motor Transport: Brunner, p. 39.

say, this is less than the rate charged by the Railway. Gobichettipalayam has not the convenience of a railway and is only an out-agency of the South Indian Railway served by Tiruppur. This Out-Agency service is run in co-ordination with the United Motor Service. The rate basis accepted by this Company is three pies per mile for long distance routes and 6 pies for short distances. Point-to-point traffic is facilitated by low rates, and high rates charged on floating traffic within short distances are made to subsidise the low rates on longer routes. Peelamedu to Coimbatore is a distance of 3 miles on which the fare charged is 2 annas or 8 pies per mile! The same fare of 12 annas to Gobi is charged for intermediate stations as far as Tekkalur which is 19 miles from Coimbatore and 35 miles from Gobi. The fare for 35 miles also is 12 annas which comes to nearly 4 pies per mile. Avanasi is midway between these two and all rates to Gobi taper beyond this place.

A fine example of road-rail competition is furnished in the case of the road service between Coimbatore and Mettupalayam. The distance between these places is nearly 23 miles—22.75 to be exact—and the fare charged is only 4 annas which means 2.1 pies per mile. As the distance decreases, the rate increases, so that for Peria Nayak, a place midway between these two, the fare is 3 annas for 11.5 miles which comes to 3.1 pies per mile. Yet another instance of road-rail competition may be taken—Coimbatore to Palghat. The distance between these two is 30.4 miles for which the rate charged is only 6 annas, *i.e.*, 2.2 pies per mile. Puducheri, however, which is only 4 miles from Palghat is charged 3 annas. On both these sections, the South Indian Railway had necessarily to lower its rate to meet the stiffness of the competition offered. The rates to these two places from Coimbatore were accordingly reduced to 5 and 7 annas respectively

Road-Rail Transport

i.e., an anna higher than the bus fares. In spite of this, people prefer to take to the road, not only because it is cheaper but, because it takes less time. Coimbatore to Erode may be taken as yet another example. For a distance of 65 miles the charge is 13 annas *i.e.*, 2·4 pies per mile. The railway fare is higher by six annas. On this section, the South Indian Railway did not find itself compelled to meet the competition by lowering its rate, since it is a long distance route on which the comfort of railway travel out-weighs the difference in fare.

We might now take a few lines which serve towns in the interior of the Coimbatore District and have direct easy access to the Railway. Tiruppur is an important station on the Broad Gauge line between Erode and Coimbatore. It serves a number of places like Gobichettipalayam, Dharapuram, Palladam and Pollachi. Lying in the heart of the cotton producing area, its importance is bound to increase with the taking in hand of the Bhavani Project. It is thus most advantageously located and has a number of feeder roads serving it. Dharapuram is a famine stricken taluq in this District and is entirely dependent upon road transport. The nearest railway station serving it is Palni in the Madura District. In virtue of this fact, the fare from Dharapuram to Tiruppur is 12 annas for 30 miles—*i.e.*, 4·8 pies per mile. On this route, there is no marked difference in rates as we noticed in the case of Coimbatore to Gobichettipalayam. The obvious reason for this is the fact that all places along the route have to be served as there is no point-to-point traffic. The fares taper gradually. Kovil-Vazhi which is 25·5 miles from Dharapuram bears a rate of 10 annas and Nattam-valashu, midway between the two, is charged 7 annas. Thus there is greater uniformity followed on this route, and the average rate per mile is about 6 pies. Another noticeable feature is that the rate of increase in fare is greater

Transportation Costs

towards Dharapuram than towards Tiruppur which is a railway station. The Tiruppur-Mettupalayam route offers the example of a road on which there is inter-bus competition. On this section there is competition between the U. M. S. and the Gopal Service. The proof of this lies in the fact that the fare is only 10 annas for 33 miles. We saw that for 30 miles in the previous case the rate was 12 annas. The rate therefore is 3·7 pies per mile. Besides this, through rates are quoted from Mettupalayam to Dindigul, Palni, Dharapuram and Palladam. The corresponding rates are Rs. 1-12-0; Rs. 1-8-0; Rs. 1-2-0 and Re. 0-12-0. A further example may be taken: Dharapuram to Coimbatore. This is a heavily worked route on which 6 buses run 6 round-trips of 102 miles a day. It is the only road that links up the taluq head-quarters with the District head-quarters and is a good second class road. The fare charged here is Rs. 1-1-0 which comes to 4·8 pies per mile. Palladam—the biggest bus station of the U. M. S., and probably one of the very biggest in India, is midway between these two. From this place eight routes branch off. The fare from Coimbatore to this place is nine annas. Compared to this, the Coimbatore—Udamalpet line is cheaper to the passenger. For a distance of 53 miles the charge is 13 annas only. The rate gradually increases on the intermediate points, so that from Mantiripalayam to Udamalpet, the fare basis is 5½ pies to the mile. There are 47 different routes operated on the entire system of the U. M. S., and from a study of the fares charged on all of them, one is led to conclude that the rate charged in short distance traffic on the long distance routes is about 6 pies per mile as against 4 pies on long distance point-to-point traffic.

Chidambaram is a fairly important place with regard to road transport. Lying in an area well knit with railways, there is not that amount of scope offered for

Road-Rail Transport

development of road services as in other districts like Coimbatore. Nevertheless, there are four important routes from this place:—to Vriddhachalam, on the Trichy-Villupuram chord line; Cuddalore, served by the main line as well as the Vriddhachalam-Cuddalore branch line; Srimushnam and Kattumannarkoil. The latter two places are remote from a railway line and thus have to depend only upon road transport. Six buses ply on the Kattumannarkoil route of 15 miles; 10 on the Vriddhachalam line of 28 miles; 3 on the Srimushnam road of 22 miles, and 4 on the Chidambaram-Cuddalore section. The fare on the first route *viz.* Chidambaram-Kattumannarkoil, is eight and a quarter annas. Originally it was only eight annas, the increase being due to the levy of the surtax of $1\frac{1}{2}$ annas on every gallon of petrol retailed in this Presidency. For 15 miles, $8\frac{1}{4}$ annas is a good rate, and amounts to 6.6 pies per mile. If the Srimushnam route is compared, the rate is slightly lower *viz.*, 5.5 pies per mile and for Vriddhachalam it comes to 5 pies. The least rate, however, is for Cuddalore *viz.*, 0.8-3 for 30 miles which is exactly double the rate to Kattumannarkoil. The reason for this is that the railway fare itself amounts to just 8 annas, and naturally, the convenience and comfort of a train are things in favour of railway locomotion. Anyway, what we find in this case is the low rate of 3.3 pies per mile. If the railway sets the pace for the motor in this case, the road offers a check to the railway in drawing away traffic from the Cuddalore-Vriddhachalam branch line which has proved so uneconomic to maintain, that it has been included in the list of branch railways to be closed down. From the rates charged in these taluqs—Chidambaram, Cuddalore and Vriddhachalam, we may estimate the average rate per mile at 5 pies, which is not uneconomic.

Transportation Costs

On the Trivandrum State Transport System, the generally accepted rate is, in Travancore currency, 8 cash per mile which, when commuted into British Currency, works out at nearly 3·4 pies per mile. Trivandrum to Quilon is a distance of 44 miles and the rate thereon is 21 chakrams or 12 annas. In this case it comes to 3·3 pies per mile. Trivandrum to Nedumangad is a short distance service of 12 miles on which the fare is 6 chakrams which also works out at the rate of 3·4 pies. The same is true of the Nagercoil-Colachel, and Nagercoil-Cape Comorin and the Trivandrum-Nagercoil routes. The Transport Superintendent in his administration report for the year ending 1113 (April, 1939) says, "The aim of this Department was to effect a standardisation of fare and accordingly a fare of 8 cash per mile, which is a very reasonable rate under local conditions, was adopted." The cost of living in Travancore State is much lower than what it is in British India and this accounts for the low rate as compared to conditions here. On the shorter routes working the town services, a slight concession is shown. It is, however, interesting to note here that though the charge on the Trivandrum-Quilon route is only 12 annas for 43 miles, the railway rate is as low as 7½ annas. This is due to the fact that prior to the inauguration of this service under State monopoly, the acuteness of competition compelled the Railway to cut its rate. In Hyderabad State the fare per passenger is 6 pies per mile (O. S. currency) on district services and slightly less in urban transport.

Freight transport has not developed to the extent that it has in the case of passenger services and, as a result, it was not possible to undertake a survey of this aspect of the problem. There is some parcels traffic for which a flat rate is charged irrespective of distance. In Coimbatore on the U. M. S., the basis of charge is an

Road-Rail Transport

anna for every 20 lbs. and half that rate on perishables. Similarly, in Travancore too, it is a flat rate. For packages or luggage accompanying a passenger the charge is 4 chakrams or 2·3 annas when the weight exceeds 28 lbs. and is less than 56 lbs.; when it is above the latter but less than 112 lbs. the charge is 3·4 annas. Under the terms of contract with the Kannan Devan Hills Produce Company, Ltd., the Travancore Transport Department undertakes to carry its tea at a flat rate of 4 annas per ton-mile. Since the carrying capacity of the vehicles intended for this purpose is $2\frac{1}{2}$ tons, the receipts per vehicle-mile would be 10 annas. On the Hyderabad System there is considerable Goods traffic. Receipts have risen from Rs. 15,386 in 1934-35 to Rs. 94,493 in 1938-39—an increase of over 500 per cent. The goods tonnage figures for the two years are, 3,646 and 52,135. The rate of charge varies with the different out-agencies which serve the railway stations. The least rate is charged in the case of Nalgonda. The rate is $\frac{1}{2}$ pie per maund-mile for a distance of 44 miles from the rail-head at Bhongir. A similar rate exists in the case of Suriapet. The highest rate of 2 pies per maund-mile is charged for Mashirabad and Azamabad, 10 and 12 miles respectively from Secunderabad railway station. The longest distance between any out-agency and railway station is 92 miles *i.e.* Adilabad-Nizamabad—for which a pie per maund-mile is the rate. Taking the rates charged on all the 12 out-agencies, we find that the average rate per maund-mile works out at 1·25 pies. In certain cases where traffic offers in bulk, a reduced rate is charged as in the case of the cement traffic of Secunderabad. The average load obtained in goods-traffic during the year 1938-39 was 2·62 tons per vehicle-mile as against average earnings of 20 pies per ton-mile under the head of goods and parcels.

We might conclude with a few figures for goods traffic charged by transport vehicles. The figures are from the marketing reports published by the Agricultural Marketing Officer's Department. The Nipani district in the Bombay Presidency lies in the heart of the country and has not the advantage of being a railway station, so that considerable tobacco traffic is carried on the roads to important centres like Bijapur, Dharwar, Belgaum and Sangli. The distance between Kolhapur and Nipani is about 29 miles and the charge for carrying 60 to 80 bags varies between Rs. 60 and 80. The report says: "The expenses of transporting a bag of tobacco from Nipani to Bijapur by motor lorry comes to about 8 annas as against 12 to 14 annas when the transport is done by rail. The development of motor traffic in the Nipani is very largely due to the existence of good 'pakka' roads, the other factors responsible being that the motor lorries are economical because of quicker transport, cheaper freight, convenience of receiving goods at the godown of the sender and delivering them at the consignee's place, and elimination of carting, handling and other charges to and from the railway station."¹² They have calculated the incidence of transport costs to the rail-head for a few representative cases. These differ for different places. In certain cases it is as high as 4.1, as for example the cost of the Guntur producer serving the Sukkur manufacturer. In others it is quite low: 0.3 per cent of the consumer's price for a maund of 'Bidi' tobacco produced in the Nipani area and consumed in Calcutta. Taking the average for the 11 representative stations they have examined, the average rate works out to just 1.4 per cent! Compared to this, the railway's share of 15 per cent is exorbitant. Surely then, it is no wonder that the railways are unable to put up with the stiff competition offered by the road haulers.

¹² Marketing of Tobacco, p. 284.

Road-Rail Transport

The comparative advantages of motor transport are so great that inspite of a higher road-rate than the railway freight, in certain cases, it is preferred because of the elimination of costs incidental to railway transport. Wheat is transported from Okara to Lahore, eighty miles off, at a cost of $3\frac{1}{2}$ annas per maund-mile. Within the Presidency of Bombay, the charge comes to 6 pies per maund-mile. The rate varies with the kind of traffic handled, the condition of the roads, distance travelled and the availability of other forms of conveyance. As a rule, the better the road and the easier the portability of the goods, the lower must be the rate. Contrariwise, the greater the distance and fewer the rival agents, the higher would be the freight. Usually, it is believed that the motor vehicle can operate only within a radius of about 50 miles. Actually, however, 600 miles is not uncommon. The Marketing report shows that wheat is shipped from Okara to Gwalior of the same distance at the rate of Rs. 1-6-0 per maund against Rs. 1-12-0 by rail.¹³

We shall now turn to receipts. We saw that the operating expenses of the Dharapuram-Dindigul line amounted to Rs. 335 as against total receipts of Rs. 615, for a period of 3 weeks. The net credit would therefore amount to Rs. 280 on a total mileage of 2,860. The net receipts for this would come to an anna per mile. Similarly, if the Pollachi route were taken, the net credit in November, 1937 would be seen to be Rs. 4,635, against total expenses of Rs. 3,015 incurred by working 1,770 miles, which comes to a net receipt of $3\frac{1}{2}$ annas for the line as a whole. Taking an individual bus, it is found that the total collection of bus No. M. L. 1692 in the month of November, 1937, was Rs. 1,120 and working expenses were Rs. 406, thus showing a net credit of Rs. 714. The total mileage run during the month

13 Figures from the Marketing Report on Wheat, p. 236.

Transportation Costs

was 3,700 so that the earnings come to nearly 3 annas per mile. These figures are necessarily high because there was no expenditure during the month under survey under the head of tyres and tubes.¹⁴ Moreover, the calculation is purely upon the basis of operating expenses and net collections. It is a pity that annual figures were not made available as the statistical department had been closed down. If the net earnings-per-mile on the Trivandrum Service were to be calculated, it would come to Rs. 61,015-15-6 on a mileage of 13,69,300 which works out to 9 pies per mile. This represents net profits after paying all expenses, depreciation, interest, etc. On the Hyderabad State System, the net earnings per mile after deducting all expenses were 10·3 pies in 1932 gradually rising to a maximum of 14·8 pies in 1935-36. In 1937-38, the figure fell to 3·21, and in 1938-39 there was a loss in working. The total working expenses including Depreciation were Rs. 29,22,539 against total gross earnings of Rs. 28,65,783 on a total mileage of 8·65 millions. The net earnings therefore were —1·28 pie per mile. Messrs. Gadgil and Gogate of the Gokhale Institute felt considerable difficulty in the collection of data and confess that the information gathered was too meagre to enable them to say anything about the profit earning capacity of the bus-owner. To quote them, “on the data we present, no definite conclusion is possible. Profits were made mostly along the more sheltered routes, i.e., routes which were at the moment not experiencing for one reason or another, any considerable overcrowding. Profit making was not necessarily associated with better organisation.” This difficulty is nothing special in the case of individual investigators, it is quite general and is inevitable in virtue of the fact that the bus concerns view with suspicion and try to placate with minor details of administration

14 *Vide* Statistical Appendices D. 8—D. 16.

Road-Rail Transport

which, nevertheless, have their own value. In the course of these investigations important bus associations operating in the city of Madras were approached, but everywhere they said that the balance sheet of working expenses, earnings and other operating statistics could on no account be revealed. In the case of the individual owner-drivers, there was an absolute lack of detail whatsoever. This type of person was more difficult to tackle because, being either illiterate or ill-educated, he could not be convinced that the investigation undertaken was purely of academic interest; when, however, he was convinced he pleaded complete ignorance of all statistical data. A particular individual, it will be interesting to note, had to be cajoled into showing a small bit of musty paper whereon he had made a few entries as follows:—

	RS.	A.	P.
Memo. collections	5	15	0
Collections on the Line	2	1	6
Collections on the return journey (Kattumannarkoil to Chidambaram) ..	7	1	0
Total collections ..	15	1	6

Under expenses were found the following:—

	RS.	A.	P.
Petrol for 3 gallons	5	1	9
Oil and Lubricants	0	7	0
Commission	0	13	0
Driver's wages	1	4	0
Conductor	0	7	0
	8	7	6
Balance ..	6	10	0

Transportation Costs

The Commission was in respect of touts employed for the canvassing of custom which has now been prohibited by the new regulations that come into effect in this Presidency from 1st April, 1940. The individual was made to confess, *sub rosa*, that part of this commission—i.e., 3 annas—was a sop to Cerberus. The driver, it would appear, was paid a daily wage, while the 7 annas credited to the conductor was his daily batta in addition to the pay of Rs. 10. Needless to say, such figures are highly interesting and if available in abundance would be of some real use. In the absence of such data, broad generalisations have to be made on the information available. It was only in the case of Travancore State System that the figures were available. When such authoritative bodies as the Mitchell-Kirkness and Wedgwood Committee armed with the full weight of Government authority confess that their figures “ must be treated with all the reserve due to conjectural estimates ”¹⁵ our helplessness is nothing surprising. Nevertheless, it is strongly felt that the collection and collation of exact statistics is the essential pre-requisite of any study of the financial results of motor operation and should be the precursor of all future legislation in motor transportation.

15 Mitchell-Kirkness Report, p. 11.

CHAPTER IX

THE STATE TRANSPORT SYSTEM OF TRAVANCORE.

TRAVANCORE is one of the most important of the States of India and is the most southerly of States with its apex at Cape Comorin—The Land's End of India. It has a total area of 7,625 square miles and its population according to the last census was 5,095,973. It is one of the most fertile regions in India and half of the State is forested. The forests are rich and yield large revenues to the State. Nature is in one of her grandest moods in Travancore. Every visitor is fascinated with its exuberant natural beauties, its old-world simplicity and its Arcadian charm. There is considerable back-water traffic in the State in addition to the roads. The South Indian Railway runs through the north-west of the State, linking up Trivandrum with the rest of South India. Travancore is famous for its arts and crafts and is the "Spice-garden of India." Some of the finest tea and spice gardens are to be found there. The State has immense mineral possibilities and has large deposits of ilmenite, monazite, kaolin and graphite. The introduction of the Pallivasal Hydro-Electric Scheme is bound to confer untold advantages upon the State. Cotton-weaving, coir-making, wood and ivory carving, and carpentry are some of the most important cottage industries. Travancore is rich in its fisheries. There are a number of towns of commercial importance such as Quilon, Alwaye, Nagercoil and Colachel. Travancore has almost inexhaustible supplies of timber, teak, sandal, ebony and other valuable hard woods, besides soft-wood, suitable for paper-making and artificial silk. The State has already started a rubber factory and proposes starting a kaolin factory. Thus, the industrial possibilities of the State are immense. It is well served by roads and canals and there is, besides these, a bi-weekly air mail service between Bombay and Trivandrum.

Travancore State Transport

The total mileage of roads in the State is about four thousand, and the annual grant for maintenance of roads is nearly eleven lakhs of rupees. There are five broad classes of roads: gravel and metalled roads, stone metalled roads, bituminous roads, cement concrete and other types. The mileage under each class is 2,440 miles and 1,270 yards, 1,031 miles and 1,077 yards, 7 miles and 557 yards, and 72 miles and 616 yards respectively, thus, making an aggregate of four thousand fifty-two miles. The geographical location of Travancore is such that it has to depend almost entirely on either road or back-water transport. For purposes of goods traffic, the latter mode is much in evidence since it is the cheapest way of carrying goods. As for the roads, the traffic is almost entirely passenger. The South Indian Railway line which originally stopped away at Quilon was connected with the capital in 1915 and Trivandrum Central is the terminus of the metre gauge main line from Madras. The areas served by this line are not very large and due to the mountainous nature of the districts in the North of Trivandrum, railway laying is very costly, so that there is not much scope for economically laying out branch lines. The railways have, therefore, to depend on the roads to a very large extent for traffic, and to this extent the roads act as feeders to the railways. Nevertheless, there is serious competition between these two agencies of transportation and this assumes a serious form in North Travancore which alone is served by railways. The state of affairs, both with regard to road-rail and inter-road-motor competition, was very chaotic, so that the State decided to take up the operation of the main route from Trivandrum to the Cape as a first step in giving effect to the recommendations made by the Transport Reorganisation Committee appointed to investigate into the question. The Committee's recommendation was that the Government should take direct control of the road and

Road-Rail Transport

water transport of the State. Consequently, the Main Southern road, where traffic was heaviest, was chosen as the first route to be operated under direct Government aegis.

Prior to 1113, when the State of Travancore monopolised the road-passenger transport system on the Main Southern route, there was a plurality of bus concerns competing with each other at uneconomic rates so that many bus concerns operated on the same route. During the two years preceding the introduction of the Government scheme, there were in Trivandrum and part of Quilon District fifty-two routes on which 155 buses plied, thus making an average of 3 buses per route. But all routes did not have the same amount of traffic. The most heavily worked lines were Nagercoil-Aramboly-Tinnevely line on which there were 28 buses. On this particular route, there were three large concerns that operated it: the Pioneer Motor Service with nine buses, the Saraswathi Motor Service with six buses and the Hameedia Motor Service with five. Of the other heavy lines, the Nagercoil-Aramboly-Papanasam route was one, where nine buses operated, five of which belonged to the Pioneer Motor Service and four to the Champion Automobiles of Kalakad. The Vadasery Market Junction to Azagiapandiapuram section had five buses of the Pioneer Service. This route was selected by the Transport Department for monopolisation from 16-1-1114. Writing about the taking up of this route, the Commissioner of Police made the following observations: "As the period of the G. Permits expires in the case of two buses in about 3 months' time and of the remaining one about 4 months' time thereafter, the question of commencing the State Transport Service on the line may be dropped till then." The Commissioner of Police has instructions not to issue any more permits to operate on the above line.

Travancore State Transport

There were, on the whole, thirty-two routes in the district south of Quilon. A detailed list of these routes and the number of buses on each route is appended at the end of the book.¹ On the Trivandrum East Fort to Vizhingam route there were five buses. This route was selected by the Transport Department for operation. On the routes South of Quilon, there were 88 buses of which the largest single operator was the Pioneer Motor Service of Nagercoil with 37 motor buses on the line. The Saraswathi Motor Service ran eight vehicles on this section while the Hameedia Service operated five.

In the area North of Quilon there are twenty-two different routes with a total of 67 buses plying thereon of which the largest is the Quilon-Punalur Motor Transport Union possessing a fleet of 24 buses. Another of the important operators is the Kottayam-Chenganacherry Syndicate with six, and the Chengannur-Konni Motor Union is another, with five. The Pioneer Motor Service also has a share in the traffic of this area and runs three buses here. The most heavily worked lines are the Shencottah to Shencottah Frontier Section, whereon there are fourteen vehicles; the Chenganacherry-Kozhencherry route with six buses and the Quilon-Shencottah section with nine vehicles, all run by the Quilon-Punalur Motor Transport Union. But the worst line, in point of view of competition, is the Punalur-Quilon route where there are nine vehicles. It is here that the road offers serious competition to the South Indian Railway, since Punalur is at the foot of the Ghat section to Shencottah. So strong has been the effect of such competition that the railway felt compelled to declare competitive rates by lowering the fare to 12½ annas between Punalur and Trivandrum Central.

1 *Vide* Appendix C. 25.

Road-Rail Transport

These are the main routes but, besides these, there are quite a number of shuttle-services between these main ones such as the Alancode-Madathura route *via* Kilimanur and Nilamal, Kayaculam and Chengannur, and the Trivandrum-Kattakada-Nedumangad route.

In the North of Travancore, there are a total of 226 buses on 65 routes, of which the Pankajam Motor Service possesses a fleet of 13 buses. Of these, one is for Postal or "Anchal Mail Service" and another is a *reserve* bus to be used only in case of breakdowns. But the most important single operator is the Kottayam-Always Motor Union which possesses a fleet of 23 buses; of these, four are used for the Postal Mail service and four are reserved for emergency purposes.

The Trivandrum-Kottayam route is one of the most heavily worked lines in the whole State and on this, 31 buses are operating, two of which are kept in reserve. Another such one is the Alleppey-Aroor branch whereon there are 19 vehicles. The Trivandrum-Kottayam route, in effect, consists of three sections and may be subdivided thus: Kottarakara-Kottayam with 18 buses and 2 reserve; Trivandrum-Kottayam with 2 and the Trivandrum-Kottayam section with 9 buses. The road between Quilon and Alleppey is of great importance; it connects two places of great commercial activity which are advantageously located as port towns. On this route, therefore, there are twenty-one buses, of which one is allocated for reserve purposes. Fourteen of these, of which one is "reserve" belong to the Alleppey Syndicate and six to the Automobile Corporation. On the Kottayam-Erattapettah line there are 22 buses, twelve belonging to the Associated Motor Union and ten to the S. K. V. M. Union of Kottayam. The Kottayam-Mandakayam route consists of two shuttle-services between Kottayam and Kumilion on which there are four buses and Kottayam-

Bonami on which there are three. But on the main route from Kottayam to Mandakayam there are 10 buses on the whole, all belonging to the High Range and High Land Motor Unions Ltd., Kottayam, of which five are held for reserve purposes. Similarly on the Kottayam-Alwaye line, there are 14 buses with shuttle-services between Moovatupuzha-Kottayam; Moovatupuzha-Alwaye; Alwaye-Perumpavoor and Kottayam-Thodupuzha *via* Palacozha.

This has been the existing state of road transport for the past two years. Needless to say, prior to the introduction of the monopolised State Transport Service there were a number of concerns with too many buses on these routes. The Trivandrum-Nagercoil route which has now been taken up by the State for operation had 71 buses operating on it, belonging to 8 different concerns chief among which was the Pioneer Motor Service with 49 vehicles. On the Nagercoil-Cape route, which also is now operated by the State, there were fifteen buses. The Nagercoil-Aramboly (en route to Tinnevely) section, had 22 buses. The condition called for improvement, so that a Conference was held of the bus-owners of Travancore on the eve of the introduction of the State Transport Service (19-6-1113) with a view to discussing ways and means of restricting competition and feeding the roads with just those traffic needs that were necessary. The list they drew up was exhaustive and covered 112 routes. Five routes *viz.*, Vamanapuram *via* Main Central Road; Vamanapuram *via* Kilimanoor; Chathanoor-Quilon; Thiruvella-Bonami and Thodupuzha-Kottayam, were cancelled. The existence of this last named route was objected to as it overlapped 32 miles of the Kottayam-Alwaye section. The Associated Motor Union requested that the Kottayam-Poonjar service should be stopped and that a shuttle-service between Erattupettah and Poonjar should be opened. It was also suggested that the Peppathipara-Palai and Palai-Piravom routes could be divided into two

Road-Rail Transport

services: Koothattukulam-Piravam and Kothattukulam-Palai (via Ramapuram). The following incorporates their suggestions for the main routes:—

Route.	Seating Capacity.	No. of buses required.	Spare buses.	Number of trips.
1. Nagercoil-				
Manavalakurichi ..	10	4	..	4
2. Kottarakara-Kottayam.	23	20	4	1
3. Trivandrum-Quilon ..	23	12	6	..
4. Quilon-Punalur ..	23	5	..	..
5. Quilon-Alleppey ..	16	20	4	..
6. Quilon-Kottayam ..	23	6	1	..
7. Quilon-Aroor ..	9	18	2	..
8. Chenganacherry-				
Kozhencherry ..	9	8	2	..
9. Chengannur-				
Kayankulam ..	13	6	..	..
10. Chengannur-Konni ..	13	6	..	..
11. Chenganacherry-				
Kottayam ..	23	6	1	..
Thirewalla-Bonami service not necessary.				
12. Kottayam-Kumili ..	23	4	5	..
13. Kottayam-Bonami ..	23	3		
14. Kottayam-Mundakayam.	23	4		
15. Ponkunnam-Palai ..	15	5	..	..
16. Kottayam-Erattupettah.	23	8	..	..
17. Kottayam-Alwaye ..	23	8	..	..
18. Alwaye-Edapally ..	23	6	..	..
19. Alwaye-Parur ..	20	8	..	..
20. Edapelly-Karukutty ..	20	5	(including Trichur service).	..

Such was the condition of road transport in Trivandrum on the eve of the monopolisation of the Trivandrum-Cape and Trivandrum-Quilon route by the State. The transport system is controlled by the Traffic Section of the Police Commissioner's Department. The Inspector-General of Police is the licensing authority and the Deputy Inspector-General of Police is in direct control of the Traffic Branch. Below these two officials, and subordinate to their command, there are three District Superintendents of Police stationed at Quilon, Kottayam and Trivandrum. Each of these is ably assisted by a District Traffic Inspector in charge of the control of traffic in his district.

Travancore State Transport

The District Traffic Inspectors conduct half-yearly checking of vehicles and this is done both by the local police and by the Traffic Inspector. A further means of effectively checking an unhealthy increase in the number of road-motor buses is by condemning them as unworthy. Usually after a period of five years, all buses are condemned.

In Travancore, the registration fee for any bus is Rs. 16 irrespective of capacity. The cost of a "G" permit is Rs. 16 on first issue and Rs. 8 for renewal, and these permits are only issued to buses that ply for hire. The driving licence fee on issue is Rs. 3 and on renewal Rs. 2 per year. The testing licence fee is Rs. 7 and 14 chakrams. Before the grant of licences, a medical examination has to be undergone and, if the Commissioner is not satisfied, he may insist on a re-examination by an approved Government Medical Practitioner at a fee of Rs. 2. A driver must have had three years' driving experience before a certificate of competency could be granted.

In 1111 there were 295 cars, 111 buses and 50 lorries in Travancore. In 1112 there were 306 cars 96 buses and 49 lorries while in 1113 the corresponding figures were 322, 170 and 43. (*N.B.*—These refer to the Malayalee era).

The table below gives the number of vehicles registered under each type for the three years 1111-1113:—²

Type of Motor Vehicles			1111	1112	1113
Cars	..	..	295	306	322
Buses	..	..	111	96	170
Lorries	..	..	50	49	43
Cycles	..	..	32	35	39
			<hr/> 488	<hr/> 486	<hr/> 574

² Administration Report of the Police Department for the year 1113.

Road-Rail Transport

From this it is seen that, as compared with 1111, there was a decrease in the number of motor vehicles by two in 1112 and the chief decrease was in the case of motor buses. In the next year, there has been a large increase in the number of buses, the figures almost increasing by 80 per cent. The receipts from the registration of vehicles also show a decrease. Fees realised under the Motor Vehicles Regulation and the rules thereunder, were Rs. 66,845-12-9 as against Rs. 69,301-24-9 in the previous year. This decrease was largely due to the large curtailment in the registration of buses consequent on the proposals of the State Transport Scheme. In 1113, the receipts shrink further to Rs. 53,204-26-10 and this may be entirely attributed to the fact that the State system came into operation during the year under review.

Introduction of the State Transport Scheme. It was under conditions such as these that the Transport Department was formed to undertake the operation of the main Southern Road which has the heaviest traffic in the State. The services of Mr. E. G. Salter of the London Passenger Transport System were requisitioned with this end in view. According to the terms of contract, in addition to his salary of Rs. 1,000 and car allowance, he was entitled under clause 16 of the terms of agreement to a bonus of 5 per cent of the net profits. Immediately on his arrival, the Transport Department was constituted and preliminary arrangements for the selection of sites for the location of the offices and garages of the Department were made. The site chosen at Trivandrum was a large area lying in the proximity of the terminus of the South Indian Railway and at Nagercoil—a plot of land near Chemmankulam was selected. As the superstructures had to be built locally, permission of the Government was sought for the utilisation of one of the Customs Godowns at Valiyathura.

Sixty British Commer Chassis were ordered for. The buses are commodious, the wheel-base measures 12 feet 6 inches and the wheels are fitted with 7.00 \times 20 tyres twin rear, "the generous proportions of which," in the words of the Transport Superintendent, "ensure the utmost riding comfort."³ All these buses are fitted with Perkins Diesel Oil Engines and are run on Diesel Oil. The use of Diesel Oil in preference to petrol was decided upon because it costs just a third of petrol and, being a heavy oil, the losses due to evaporation are inconsiderable. This is specially to be considered when, in a hot tropical country like India, there is great scope for loss this way. More important than these is the fact that an omnibus run on Diesel Oil consumes only half as much fuel as one run on petrol.

The Transport Department was very wise in ordering the chassis alone from Britain since the cost of getting them ready-built for the road would have been great. The first consignment received was one of twenty-five buses, the chassis of which were built by the Mechanical Department. The Transport Superintendent in his report says that the work was carried out with such efficiency that the rate of erection was a bus a day. For building the superstructure of these vehicles the co-operation of the Public Works Departments Workshops was sought but, as all the work could not be done by them, a portion of it was given to Messrs. Byramshaw & Co., Madras. The payments to the Public Works Department and this firm are shown in the relevant statements in the Appendix.⁴

"Overcrowding the routes with too many vehicles has been one of the failings of transport undertakings in the majority of cases, as this involves wasteful outlay of capital

³ Administration Report for 1113.

⁴ *Vide* Appendices, C. 18 and C. 19.

Road-Rail Transport

and enhanced operating costs.”⁵ It is unwise to allow a number of vehicles to operate on any particular route. Usually, the chief reason for bus undertakings to ask for operation on a particular route is that it pays, and because traffic is heavy. By the laws of economics, there must necessarily be great demand for operation on this route and if all and sundry are permitted by licence to ply their vehicles, then, though the traffic may continue to be heavy, it would be light in comparison with the number of operators. Moreover, this would lead to wasteful competition between rival concerns as each would like to get all the traffic that it could. Under such circumstances, the net return on the capital invested would not be commensurate with the operating and other expenses so that many of these would have to withdraw from the field “*hors de combat*.” While this is true under conditions of competition, it is equally so in the case of a monopoly. Either way, the sovereign truth is that there must be just that amount of provision of facilities as are required by the public. Any further expenditure on road services would be wasteful and uneconomic.

For a proper and correct appraisal of the number of vehicles that would be needed to operate on a particular route, what is urgently needed is an index of the density of traffic on that particular route. It is with this end in view that adequate statistics pertaining to the volume and direction of traffic have to be obtained, just as the Railway Board in its reports publishes comprehensive statistics about the density of traffic offering on each railway, class by class. In determining this density, a fairly large area has to be chosen for purposes of investigation, and the period chosen should be fairly long and representative. That is to say, not much purpose would be served by studying the traffic figures on a

5 Report of the Transport Superintendent.

Travancore State Transport

particular day or two; it should cover at least a week. Sometimes in India we have seasonal flows of traffic. There might be either a festival in the vicinity of some place or it might be a "Shandy." These "Shandies" or weekly-markets account for a great bulk of traffic of a day's duration so that, though normally on other days in the week there might be just enough traffic, on these 'market' or 'festival' days the heaviness in traffic would be particularly great necessitating a larger number of vehicles and more frequent services.

The work of determining the flow of traffic in the State of Travancore, preparatory to the introduction of the scheme was assigned to the Police Department. The constables on point duty were ordered to take a census of the passengers on each route. These returns were then collated together, and upon them were based the number of vehicles to be operated, the time when traffic was dense, and the frequency of service required. For example, the Traffic Department found that 75 passengers travelled on an average per hour on the Trivandrum-Nagercoil route; 33 on the Nagercoil-Colachel and 34 on the Nagercoil-Cape Comorin sections. From this it would be seen that of the three routes, the first one was heaviest, since it linked up the capital town with Nagercoil, which comes second in importance. Therefore, it is conclusive that this route needs greater traffic facilities. Statement No. C. 2.⁶ in the Appendix gives a tabular statement of the details of service on each route. For example, 18 buses were allocated to the Trivandrum-Nagercoil route of 43 miles and the number of journeys to be operated was fixed at 96 giving an average frequency of 20 minutes which is really very good for a road transport service. From Nagercoil to Colachel, 6 buses were set to operate 80 journeys at a frequency of 25 minutes. The Nagercoil to Cape Comorin

6 *Vide* Appendix C. 2.

Road-Rail Transport

route consists of a shuttle-service between Nagercoil and Suchindram—a place of religious importance between Nagercoil and Cape Comorin. On this route, *i.e.*, Cape Comorin to Nagercoil, a distance of 13 miles—there were 5 buses operating 120 journeys at an average frequency of 15 minutes. Trivandrum to Quilon is a long distance route of 43 miles for which 7 buses are allocated at a frequency of about an hour. These apart, there are a few town services, such as East Fort-Valiyathurai, for which there is one bus; East Fort to Beach Sankumughom and East Fort to Kattachekonam. On all these routes, vehicles run at school and office timings to carry the peak hour traffic and in the evening, when the traffic is not so heavy, they run at an interval of one hour. Some idea of the efficiency and economy of the service rendered by the State Transport System can be had when it is remembered that prior to its introduction, 102 buses operated the Trivandrum-Nagercoil route as against 18 of the State system; 19 worked the Nagercoil-Colachel section as against 6 now, and 13 worked the Nagercoil to Cape Comorin route where there are now only 5. Nevertheless, from what has been said above, we find that the service is quite frequent and able to carry all the traffic that offers. If traffic were to increase, then there could be either an increase in frequency or an increase in the vehicles on the road so as to meet the needs of particular traffic.

The determination of the rates of fare was difficult, especially when there were a number of rates prevalent at the introduction of the service. A plurality of rates is most annoying to the public and difficult of application by the purveyors of traffic. Moreover, such a rate as would be in keeping with the economic resources of the clientele had to be determined. The cost of living in Travancore is acknowledged on all hands to be low and, as a consequence, the tariff for transport also had to be in

harmony with it. The first great difficulty of the Transport Department was, therefore, to effect a standardisation of rates; and a fare of 8 ' cash ' per mile was determined upon as a reasonable basis of charge. The choice of this rate led to the increase of fares between certain points, so that there was some clamour from the people so affected, and the Department had to concede the demand by lowering the rate of charge slightly from the standard rate for short-distance traffic. The fares charged are quite nominal. For example, the fare between Trivandrum and Nagercoil is 21½ chakrams and between Nagercoil and Cape Comorin it is only 6 chakrams. The charge from Nagercoil to Colachel is only 7 chakrams.⁷ The fare tables are made available to the public along with a Time-Table of arrivals and departures of vehicles which is published in all the State newspapers and the Government Gazette.

The State Transport Service was inaugurated on the 9th Kumbhom 1113,⁸ and the first routes to be operated by the Department were Trivandrum-Nagercoil; Trivandrum-Neyyatinkara; Nagercoil-Colachel and Nagercoil-Cape Comorin. The Trivandrum town service came into operation on the 22nd Meenam 1113, while the Trivandrum-Quilon service was started only at about the end of the year 1113. The financial results of the six months ending with the year 1113 are quite encouraging. The number of vehicles actually operating at the commencement of the service was 54 and that at the end of the year 1113 was 51. The decrease is due to the fact that the Department's buses were burnt or otherwise damaged during the Travancore State Congress disturbances when rabid hooliganism was rampant. During these six months, there was a net profit of Rs. 61,015-15-6 on a capital investment

7 One chakram is equal in value to 0.57 anna (British).

8 i.e. 21st February 1938.

Road-Rail Transport

of Rs. 5,98,731-3-5 which works out at a profit of 10.2 per cent for the half year, or 20.4 per cent for the year. Needless to say, the rate of profit is astonishingly high, and augurs well for the rapid monopolisation of all routes by the Department.

The net receipts from passenger traffic amounted to Rs. 3,51,444-14-7 including a sum of Rs. 495-20-8 from concession tickets and Rs. 1,793-21-6 from private-hire and luggage charges. The receipts from the carriage of parcels amounted to Rs. 2,874-0-4 and the Government grant for the carriage of the Postal Mails amounted to another Rs. 348-3-0. The receipts from miscellaneous items such as advertisement, etc. equalled Rs. 1,587-4-15 thus making an aggregate sum of Rs. 3,56,253-22-10. The details of these receipts are shown clearly in Statement No. C. 5.⁹ in the Appendix. From that statement it will be seen that the receipts for the month of Kumbhom are least since there were only twenty-one days in the month on which the services were operated. The passenger receipts reach a maximum during Edavom, when the figure of Rs. 68,128-5-8 is reached; there is then a slight fall in Mithunom and a subsequent rise in Karkadagom. The increase in receipts during Edavom is due to the introduction of the Trivandrum Town service. The fall in Mithunom and Karkadagom was due to the seasonal fluctuation in traffic. The slight subsequent increase is attributable to the introduction of the Trivandrum-Quilon service. The Postal Mails are carried on a contract basis whereby the Government pays the Department a fixed sum of Rs. 61-2-0 (Travancore Currency) per month. The parcels service has been increasing in popularity, so much so, receipts under this head have shown a marked tendency to rise. In the month of Karkadagom they were Rs. 753-2-0.

9 *Vide* Appendix C. 5.

Travancore State Transport

As against these receipts, the total working expenses of the half year under review were Rs. 2,21,806-7-4. This includes payment for materials and articles not actually used in 1113. The details of this are shown in Statement No. C. 9 of the Appendix.¹⁰ Under the main head "Administration—Management and Control," the expenditure amounts to Rs. 14,066-9-11. This includes expenditure incurred in respect of Executive, Office and Depot Staffs, Audit charges, Travelling and other allowances, besides Office contingencies. Rs. 30,570-4-13 were incurred on account of "Repairs, Renewals and Replacements." Under this head, Rs. 20,049-5-8 were spent on materials and spare parts and Rs. 2,714-2-6 on account of Electric power and water supply. The largest single item under working expenses is "Operating Expenses." This alone accounts for Rs. 1,77,169-20-12 and consists of wages of inspectors, drivers and conductors, purchase of Diesel Oil, Tyres, Tolls, Licence and Registration. The expenses on account of Diesel Oil amounted to Rs. 43,127-4-15,¹¹ and for other oils and greases it came to Rs. 7,263-15-6. The most important item, however is "tyres" which accounts for Rs. 65,591-0-15. The Transport Department has entered into a contract with Messrs. Ardeshir & Company whereby the State pays the company an anna for every mile run and makes it obligatory on the part of the company to replace the tyres when they are either worn out or damaged. Tolls account for Rs. 14,453-0-0. The total for a large bus of ten seats and above is Rs. 2, and for one below 10 seats, Rs. 1-14-0. The annual compounding fee for these is Rs. 42 and Rs. 31-14-0 respectively. The State, however, pays a lump sum of Rs. 3,000 per annum. The expenditure

¹⁰ *Vide* Appendix C. 9.

¹¹ In Travancore Currency 16 cash. make a chakram and 28½ chakrams a British Rupee; or 28 chakrams a Travancore Rupee.

Road-Rail Transport

under ' insurance of buses ' is negligible, for buses are not insured as such with any company. On the other hand, an Insurance Reserve Fund is created to which the Department subscribes at the rate of Rs. 200 per vehicle per annum. This might seem rather novel but the system has its own advantages. Experience has shown that there have not been any serious accidents necessitating insurance on a large scale. Moreover, if buses were insured with any company, the payment of premia would represent a net expenditure which would have to be debited against revenue. But the constitution of an Insurance Fund would be akin to a Sinking Fund, the proceeds of which could be utilised whenever the need for it was felt.

With regard to capital expenditure, the expenses incurred amounted to Rs. 6,030,88-17-8. These consist of expenditure on buildings, rolling stock, plant and machinery, preliminary expenses, miscellaneous, etc. The expenditure under preliminary expenses amount to Rs. 20,556-21-0. By this is referred those expenses that were met or undertaken prior to the regular operation of the service. The Tabular Statement No. C. 14 of the Appendix,¹² gives a detailed picture of the expenditure under Debt heads. Buildings, it will be seen, account for Rs. 1,31,317-10-10; rolling stock, for Rs. 4,12,389-0-15, and plant and machinery for Rs. 13,398-19-13. As against these, there is actual capital stock on hand for which, of course, allowance has to be made for depreciation. Preliminary expenses, general charges and miscellaneous expenses account for Rs. 20,542-3-1, Rs. 21,079 and Rs. 4-24-14 respectively. Against these there is no capital stock on hand since they are in the nature of disbursements for services rendered. Depreciation expenditure accounts for Rs. 46,447. The rate of depreciation allowed on rolling stock is 25 per cent and, calculating at this rate,

12 *Vide* Appendix C. 14.

the depreciation charges would amount to Rs. 44,226. In other words, the average life of a bus is expected to be four years. Depreciation on buildings is calculated at 5 per cent and amounts to Rs. 1,599.¹³ Table No. C. 15 gives a statement of liabilities on account of payments to be made for value received during the year 1113.¹⁴ The payments are for articles bought and consumed during the year under review but to be paid in the subsequent year, i.e. 1114. The expenses under this head amount to Rs. 15,987-2-11 and, of this, the most important item is in respect of tyres worth Rs. 11,997-18-4 payable to Messrs. Ardheshir & Co. The tabular form No. C. 18¹⁵ in the Appendix gives a complete statement of assets and liabilities for the year ending 32nd Karkatagom 1113.

It will thus be seen that the net profits of working the scheme come to Rs. 57,964-22-6 after deducting Rs. 3,050-21-0 to be paid to the Transport Superintendent towards his 5 per cent share of the profits. The Transport Superintendent in his letter dated the 2nd May, 1939 to the Chief Secretary to the Government suggested that of this net profits, a sum of Rs. 41,750-24-10 might be set off against payment under capital charges for which there is no stock on hand, such as preliminary expenses, general charges, etc. He also stated that of the balance of Rs. 16,213-25-12, twenty-five per cent could be invested in a Reserve Fund.

Some novel features of this service are the parcels service, concession tickets and private hire.

(i) Parcel Agents are appointed at important stations to receive and forward goods from consignors to consignees. Thus, besides monopolising the passenger traffic

13 *Vide* Appendix C. 13.

14 *Vide* Appendix C. 15.

15 *Vide* Appendix C. 18.

Road-Rail Transport

on the routes operated, the Transport Department affords facilities for the quick and facile movements of goods of small bulk. There were 21 agencies at different places as on 31-12-1113. The introduction of this service needs special mention since even the premier State of Hyderabad which was the first Indian State to undertake road operation had not conceived of it. The agents work on a nominal 10 per cent commission basis. This service has proved to be quite popular as the receipts under it shown in Statement C. 5 ¹⁶ amply illustrate. The number of parcels handled during the 6 months ending 1113 was 13,000.

(ii) Concession tickets were first issued on the 1st Edavom, 1113. The concession was to the tune of 50 per cent in the case of students and 25 per cent for others. At the commencement of the system, the life of the tickets was restricted to one month and the holder was entitled to two journeys on any single day between the points mentioned on the ticket. Subsequently, however, tickets tenable for 50 journeys were issued, and no restriction was placed on the number of journeys to be performed on any day, the only condition being that the journeys had to be performed within 5 weeks of the date of issue. Receipts under this head have been very encouraging and the most popular section has been the Trivandrum Town area since it is there that the bulk of School, Collegiate and Office traffic offer themselves. The traffic receipts on this section which were Rs. 133-11-0 in Edavom rose to Rs. 168-21-0 in Karkatagom. The next most popular routes have been Trivandrum to Neyyatinkara and Trivandrum-Cape Comorin. The total receipts on all the five routes, *viz.* Trivandrum Town, Trivandrum-Neyyatinkara, Nagercoil-Cape Comorin, Nagercoil-Colachel and Trivandrum-Quilon, for the three months were Rs. 495-20-8.

16 *Vide* Appendix C. 5.

This, it must be remembered, refers to the short period of three months, so that the receipts, for one whole year may well be expected to be Rs. 2,000.

(iii) Apart from these two novel methods, the Transport Department hires out its buses for private purposes to the public. This facility is availed of by school and other excursion parties. On the whole, 76 trips were undertaken during the 6 months under review bringing in total receipts of Rs. 1,793-21-6. Needless to say, this concession is much in favour. The rate of charge for hired vehicles is 12 chakrams per running mile when the route selected does not belong to the routes already operated, and Re. 1 for every hour as waiting charge. For students' excursion parties, a concession is shown and the rate is 10 chakrams per mile. For marriage and other parties a maximum number of 30 passengers is allowed, though there is only seating accommodation for 23. When the route is on the lines operated, the charge is for 23 passengers plus half the charge for the additional passengers that have only standing accommodation. The capacity of the buses operating out of town is 30, viz. 23 seated and 7 standing. For town service the buses are smaller and accommodate 25, i.e. 21 sitting and 4 standing. Apart from these three, return tickets are also available. The return ticket to Quilon is only 25 chakrams while the single fare is 21 chakrams. This competitive rate is specially quoted to draw the traffic within the State to the Transport System.

The efficiency of the State operation of road services can be seen from the above figures as also from the recent resolution of the Department to extend its scope of operation. When the service was first started, only 39 out of the available 59 vehicles were utilised, and the remaining 20 buses were used for the routes taken up later. On the 22nd of Meenam, 1113, the Trivandrum-Nedumangaud route was taken up, on which 13 vehicles

Road-Rail Transport

were set to operate. The Trivandrum-Quilon route of 43 miles was next taken up, for which the rest of the seven buses were allocated. Previous to this, competition as between the road concerns on the one hand and the road versus the South Indian Railway assumed such enormous proportions that the rate was reduced to 12 chakrams for the 43 miles. The State Department considered this to be highly uneconomic and contrary to general good, and so decided to base their rates at 8 cash. per mile. By so doing, the fare to Quilon from the capital was increased to 21 chakrams and, as a consequence, there were complaints. Nevertheless, as the Department was bent upon standardising rates on an economic level, it continued to charge at the rate already decided upon, but showed some justifiable concession in the case of short distance traffic. Statement No. C. 4¹⁷ gives a clear idea of the Traffic Analysis for the year 1113. All the available information pertaining to the route, the miles travelled, number of passengers carried, receipts from passenger and luggage, and Parcel receipts, is given. From it, it is seen that the miles operated on the Trivandrum-Quilon was 39,516.8 carrying 35,074 passengers and yielding a revenue of Rs. 6,418-23-12. In comparing the financial results of the operation of this route with the others, it must be borne in mind that this section was taken up only from 5-12-1113. For heaviness of traffic the Trivandrum-Nagercoil route of 43 miles comes first. 7,38,377 passengers were carried 7,29,586.7 miles on this route and the earnings amounted to Rs. 2,21,636-16-12. The parcels receipts came to Rs. 2,588-26-8. The Nagercoil-Cape Comorin route of 13 miles comes second with a total receipt of Rs. 33,476-9-8 and the Nagercoil-Colachel route, comes third. In the town service, the most heavily worked section is that between East Fort and Kattachakonam on which 1,57,297

17 *Vide* Appendix C. 4.

Travancore State Transport

passengers paying Rs. 7,152-10-0 were carried. This service, it must be remembered, was inaugurated on 22-8-1113.

The Department decided to carry the tea of the Kannan Devan Hills Produce from Munnar to Cochin. Thereby, the State would be facilitating the easy movement of the produce of tea to the port of Cochin which hitherto had to use the ropeway to the foot of the hill, and then the road, as far as Bodinayakanur before taking the rail to the port. For the return haul, bags of rice were expected from Cochin to Munnar, so that the question of return haulage was solved. With this end in view, 14 lorries of two and a half tons capacity were ordered to move the traffic so offering. The rate of charge for such conveyance was fixed at the flat rate of four annas per ton mile. Munnar stands almost at the summit of the High Range and is adequately provided with fine roads, electricity and other amenities. It lay in the midst of a forest region which has now been converted into tea plantations by the Kannan Devan Hills Produce Company and is now a centre of the tea industry in the South of India. Moreover, Munnar has the distinction of possessing an ideal location. It is well connected by roads and is easily accessible from the plains by the Neriamangalam-Pallivasal road. This little town is also linked up with Coimbatore and Udumalpet. Most of the tea was originally shipped from Tuticorin and the tea was carried by an aerial ropeway eighteen miles long to the foot of the hill, whence it was taken by road to the rail head at Bodinayakanur. The State Transport Department undertook to carry this traffic and this has been their first attempt at tapping freight traffic. In order to facilitate this, it was officially notified in the Gazette of the 23rd May 1939 that: "Under Rule 26(2) of the Travancore Motor Vehicles Rules of 1096 passed under Section 12 of the Motor Vehicles Act VI

Road-Rail Transport

of 1094, it is hereby notified that from the 29th May onwards, all lorries and buses are prohibited from running down hill on the Ghat Road from Munnar to Neriamangalam or on any portion thereof between the hours 6-30 A.M. and 10 A.M. and from running up-hill from Neriamangalam to Munnar or any portion thereof between the hours 9-30 A.M. and 1 P.M. on all days except Sundays.'¹⁸

Administrative details of Service. The normal duties of a conductor commence in the morning when he has to present himself at the Transport Office for duty and then take delivery of the ticket-machine and four emergency ticket books. These books are provided with carbon slips attached to the back of each ticket, so that counterfoils are readily available. The duplicate is issued to the passenger, while the original is kept with the conductor. This refers to the ordinary type of tickets, but the Bell-punch machine is a more intricate mechanism and is fool-proof. In this machine, coils of tickets are loaded and the price of the ticket and destination etc. are then marked on the ticket by the conductor. In doing so, the machine automatically makes a counterfoil which gets into the machine and the original is issued to the passenger. In this case, therefore, it is the original that is issued and the counterfoil that is kept. Immediately the conductor receives these things, he has to sign in the Way Bill Register acknowledging receipt.

The conductor is now ready to go on his rounds. He is provided with a tabular sheet, on one side of which is the Way Bill and on the other, the Total Journey Bill. On the first ticket he has to sign his name and then enter the starting number of the next ticket in the Way Bill. At each point he has got to make entries pertaining to the number of tickets sold under each denomination and the

¹⁸ R. Dis. No. 1589/39—Judl. Travancore Gazette.

values thereof. The journey number, car number and route number are all to be specified in the columns provided in the Total Way Bill. In case there is any lost mileage, that has also to be mentioned. At the end of the day he has to mark the number of the last ticket issued. By providing so, it could be very easily discovered whether there has been any wrong entry; it also provides an exact index of the number of tickets sold and this will have to tally with the entry in the Way Bill and the cash handed in at the Depot Office at the end of the day. The conductor hands over the machine after finishing his daily routine, counterfoils and receipts at the Depot Office to the clerk in charge, together with such articles that may be left behind by passengers. Apart from the regular tickets, the luggage tickets too have to be submitted. There is provision for entering details regarding these in the Way Bill. Finally, there are the "Warrants." A "warrant" partakes of the nature of a pass and is issued by Government to such people to whom it wishes to pay travelling expenses; the police, for example, need not pay in cash but are entitled to hand in "warrants." The value of these is noted on the Way Bill and the total value of these for the whole transport system is then noted, and a like sum is credited to the Transport Department and a book adjustment is made with the indebted Departments.

Each day's collections are then submitted to the Treasury which issues *chalans* in token of acceptance. The *chalans* have to be gone through by the Audit Section of the Transport Department to ascertain whether the entries are rightly made. The Audit Department also gets the Way Bills with the necessary entries of the Depot Office after these have been gone through by the Accounts Section, which enters the details into its ledgers. It is the Audit Department that carries out the final checking and notes any discrepancies that might have occurred such

Road-Rail Transport

as bad coins, shortage, or excess of amounts. When any such mistakes are discovered, they are promptly reported to the Audit Section. A page in the "personal ledger" is opened out for every conductor and at the end of the month, the Audit Department makes out a "Recovery List" for each Department and forwards the list to the Accounts Section for deducting the dues from the pay of the conductor. Such sums collected are paid into the Treasury, the *challans* of which are forwarded to the Audit Section for checking. The audited accounts of the Transport Department are then rechecked by the Government Accounts Office, so that audit is reduced to perfection and there is absolutely no scope for any discrepancies anywhere.

There are four sections in the Transport Department: (1) the Depot Office which issues the machines and tickets and accepts payments of collections; (2) the Accounts Section which goes through the Way Bills and other relevant information such as daily fuel and oil issues, stock of tickets, etc. and enters these details into the books of the Department; (3) the Audit Section which checks up the entries and notes any discrepancies and (4) the Development Section under the charge of one clerk which prepares the daily Duty schedules for the drivers, conductors and others and draws up the Fare and Time Tables. Thus the maintenance of accounts, correspondence, preparation of time and fare tables and duty schedules, auditing of accounts, etc. are all done at the Head Office at Trivandrum. There is, however, another Depot Office at Nagercoil where a similar procedure with regard to receipts of collections is followed. At the end of the day, the Depot Office at Nagercoil sums up the daily collections and pays it into the Treasury the next day.

The most complete statistics are kept regarding the daily flow of traffic in either direction on particular routes, the

collections and the luggage offering for transhipment. Each passenger is allowed to carry free of charge a maximum luggage of 28 lbs. When it exceeds 28 and is under 56 lbs. the charge is four chakrams; for packages between 56 and 112 lbs. in weight, the rate is 6 chakrams per article. No packages exceeding this maximum weight are allowed to be taken. The Way Bills provide an excellent index of the density of traffic since the conductor has to enter the exact number of tickets sold between given points. A number of registers are maintained which marshal all these data clearly. The 'Pre-priced Ticket Register' gives, under each denomination, details regarding date, stock, the number of tickets sold and the balance on hand. These statistics are collected from the pre-priced ticket issues of the conductor which give information regarding the starting number of the ticket, the ending number, the number of the first ticket returned to the Depot Office and the total number sold under each denomination. Apart from these, there is also a "Stock Register of Emergency Tickets." More important than these, is the "Statement regarding the daily issue of Fuel and Oil." Here, details are filled in for each bus with the relevant opening and closing readings for both issues. The driver has to sign in the column provided acceptance of the issues, and the Garage Engineer puts in his signature to attest the issue. Thus, this statement provides a ready reckoner of the consumption per bus per day. From the financial point of view the most important statements are the "Banking Sheet" and the "Audit Statement." The former gives the date of working and the date of banking and, under these, gives the number of the Bell Punch machine issued to the conductor, the cash paid in together with the value of the warrants. In the case of the pre-priced ticket, since, there is no machine issued, that column has to be left vacant. The conductor's signature indicates that he has paid the moneys credited

Road-Rail Transport

to him and that in case of deficiency due to charging less or to bad coins, he is responsible for such shortage. The Audit Register is a more detailed statement in which the data are marshalled under the following heads:—

1. Serial Number.
2. Name of the conductor.
3. Staff number (of the conductor).
4. Amount as per Way Bill.
5. Amount as per Banking Sheet.
6. Final Audited Figure.
7. Deficiency.
8. Excess.*
9. Remarks.

It will thus be seen from the foregoing that every available datum is obtained regarding the consumption or expenditure of operation per bus and the receipts therefrom. Detailed information is collected with regard to each type of ticket. The machine-tickets are used on long distance traffic such as Trivandrum to Nagercoil and Trivandrum to Quilon. Emergency books are also issued along with these, so that in case the machine fails to operate properly, resort could be had to these. The pre-priced or stage-named tickets are used only in short-distance traffic, *e.g.*, Trivandrum Town Service, Nagercoil-Cape Comorin, etc. All the foregoing data are useful in appraising the density of traffic and in the preparation of Traffic analyses, copies of which are sent to the Head Office and to each garage for purposes of reference. A study of these monthly traffic statements would be helpful in determining whether the service rendered is sufficient and adequate. If, on a particular route, it were observed that receipts were heavy and that the buses ran practically to standing capacity, that would indicate that a few more

* (N.B.—The conductor does not get the benefit of any excess payments which lapse to the Department.)

trips would be necessitated to give the public the benefit of a quicker and more plentiful service. Similarly, if receipts were low and the buses ran empty, fewer trips could be provided, thus economising expenditure. The Developmental Section has to interest itself in these matters and acts as a sort of Research Department. Its function is similar to that of the scientist who deduces conclusions from data furnished. The head of that section will have to investigate whether the fare charged is just and whether a slight concession shown in the rate would draw in increased receipts. He has also to observe from the information furnished at what hour the peak-traffic offers and at what parts of the day traffic is slack. All these, he has got to collect and collate in the preparation of the Time and Fare Tables which are of great importance in all transport undertakings.

The mechanical side of the Department consists of the Transport Superintendent, who supervises the general work, and the Garage Engineer on a salary of Rs. 100-5-125. The lower staff consists of three Driver mechanics, 20 Fitters and 10 Fitter Coolies. These apart, there are 24 cleaners. Thus, the operating side is kept distinct from the mechanical side and skilled workers are employed for looking to the mechanical upkeep of the vehicles and to the repairs thereof. A new garage has been recently built at Alwaye besides the one at Quilon. The usual life of a bus is about a quarter of a million miles and there is need for a complete overhaul every 50,000 miles of running. The State Transport buses had to be overhauled only after they had run 70,000 owing to the troublous times consequent on the outbreak of political disturbances in the State which resulted in some loss to the Transport Department. The general standard of mechanical efficiency is not very high, though a few of the workmen belonging to the "Archarya" community show great

Road-Rail Transport

aptitude. While there is a sufficiency in the number of lower workmen, there seems to be great need for a skilled Engineer Assistant to the Transport Superintendent. He must be one who has had practical experience in some of the largest transport undertakings. Lastly, the depreciation of the vehicles seem to be very heavy as they look prematurely old. Much of this is due to the nature of the roads which entail great wear and tear owing to constant jolting. This is specially great when the vehicles do not run to capacity, but are only half full. In order to lessen the costs of depreciation, the Government suggested that the road from Nagercoil to Trivandrum should be torn up and a concrete road laid instead, and that a tar road should be laid from Nagercoil to Cape Comorin. The estimated cost of this scheme is fourteen lakhs of rupees, but the scheme is well worth it. There were, 54 buses on the entire system at the end of the period under review, of which 18 were allocated to the Trivandrum-Nagercoil route and 5 to Nagercoil-Cape Comorin, making up 23 buses on the entire line of 56 miles. The costs of depreciation on all the system's buses at 25 per cent amounted to Rs. 44,226, so that for the 23 buses alone it would come to nearly Rs. 18,000, *i.e.*, Rs. 36,000 per annum. Thus by laying a new road, a great saving in these depreciation expenses would be effected.

The running of the vehicles on the line is directly under the control of two District Inspectors on a salary of Rs. 50-5-70, one at Trivandrum and another at Nagercoil. There are 28 Inspectors on the entire system whose duty is to check the work done by the conductors on service and to verify the correctness of entries made by them in their Way Bills. By so doing, the possibility of leakage of revenues is completely obviated in addition to the superior audit conducted by the Audit and Accounts Sections of the Department, and the Accounts Section of the

Travancore State Transport

Government. In addition to the conductors who look to the issue of tickets, each bus has a parcel clerk who helps in the loading and unloading of the luggage of the passenger. In effect, he is just a porter on a fixed scale of ten rupees a month. There are 81 such clerks on the entire system, and serve a useful purpose by saving time for, otherwise, the conductor himself would have to attend to it. The system of appointing such persons on all transport systems is a desideratum and makes for efficiency. The entire strength of the staff, on the mechanical, operative and administrative side is shown clearly in Statement No. 10 in the Appendix.¹⁹

The Police Department exercises its control by checking the vehicles so as to see whether they comply with the regulations. It must, however, be mentioned that the authority that decides as to their road worthiness is not the Police Department, but the Transport Department itself. By virtue of G. O., R.O.C. No. 981/38 Jdl. dated 19-3-1938, the conductors of the State buses are exempted from possessing pass books. The Police Department, in virtue of the powers vested in it, undertook a surprise check of all vehicles in the State on the 1st April 1939 between 2 and 6 P.M. The instructions were to test the braking capacity of the vehicles, check whether there was any over-loading, and see that there was no infringement of the rules pertaining to the maintenance of horns, indication of seating capacity on the inside of the bus, " G " permits and conductor's pass books. One thousand ninety-seven vehicles were examined on the whole, of which 265 were buses and 658 private cars. The offences generally detected in the case of lorries and buses were overloading and driving without licences. The number of buses in respect of which irregularities were detected was 60. In the case of pleasure cars, irregularities were found

19 *Vide* Appendix C. 10.

Road-Rail Transport

in 108 out of the 658 checked. The total number of vehicles in the State on 19-3-1938 is shown below:—

Pleasure Cars	{ Private	3,390	(Revenue receipts under
	{ Taxi	167	Motor Vehicles Regula-
Lorries	{ Private	532	tion were Rs. 53,204-26-10
	{ Taxi	138	in 1113 out of a total of
Buses	..	412	Rs. 53,593-19-10).
Motor Cycles	..	838	

(The total number of buses and lorries belonging to the State Transport Department registered was 85 of which fifty-nine were examined on 1-4-1939). Of these, irregularities were discovered in the case of 31 vehicles. Twenty-one vehicles did not comply with the rule that the seating capacity should be displayed on the buses and nine conductors refused to furnish information.

RESULTS OF STATE MONOPOLISATION.

The beneficial effects of the monopolisation of transport are to be seen in the efficient working of the road services and the provision of a regular service at specified intervals. Prior to this, the roads were overrun by road pirates that competed with each other for the traffic offering. There were not only too many buses plying, but the traffic service offered was irregular since each of them wished to draw off the peak-hour traffic to itself. The extent of this can be gauged from the fact that eighteen buses now operate the Trivandrum-Nagercoil route where originally 108 operated, six times as many buses as now. The State of Travancore is divided up into the Districts of Trivandrum, Quilon and Kottayam. The numbers of buses in each district at the end of the year 1112 were 397, 291 and 315 respectively. The immediate effect of the introduction of the State buses was a reduction in the number of the vehicles on the roads. Thus, in 1113, prior to the introduction of the State System on 10-7-1113 (i.e., 21-2-1938), 27 new buses having current "G" permits were not put on the Nagercoil-Trivandrum route in view of the operation of the new service. The

number of buses in the district of Trivandrum at the end of 1113 was 249, thus showing a reduction of 148 over the previous year's figure. Similarly, in Quilon and Kottayam Districts, there were reductions of 167 and 155 respectively in the number of vehicles plying. There was some difficulty evinced in the collection of these figures from the office of the Police Commissioner since the method of arrangement of the data available was not uniform; as a consequence, there were small discrepancies to be found. Nevertheless, they are as exact as they could be under the circumstances and serve to show the reduction in the number of public buses on the road. Competition has thus been brought under control. So great was the extent of this, that most of the concerns were operating on an uneconomic basis and the rate for 43 miles—the distance between Quilon and Trivandrum was reduced to only 12 chakrams. The South Indian Railway had, likewise, to reduce its fare to seven and a half annas to meet the competition offered. But when the State took up this line for operation, it raised the bus fare from 12 to 21 chakrams. Curious to say, the Railway did not follow suit for fear that a raising of the rate would repel traffic from it. Such a policy is really unintelligible in view of the fact that the Railway is subsidized by the State and what loss is made on the rail could be offset by the gains on the road. Moreover, when the bus fare is increased, there can be absolutely no fear that traffic will not be forthcoming. Contrariwise, by maintaining low rates, the Railway would be competing with the State service inspite of the subsidy. The Department had therefore to offer counter concessions by making the return fare from Quilon to Trivandrum 25 chakrams though the single fare is 21 chakrams!

Most of the private concerns that were and are operating are usually syndicates of more than one unit. Some of

Road-Rail Transport

these are really large. The Pioneer Motor Service had practically the whole run of the services in pre-State Transport days. On the Trivandrum-Nagercoil route alone, there were 49 buses on this Service, three of which were used for the carriage of postal mails. The service had 123 buses of its own, plying on 13 different routes. The largest number of these were on the following routes:—

Trivandrum-Nagercoil	..	49	buses
Nagercoil-Cape Comorin	..	11	„
„ -Azhagiapandipuram	.	5	„
„ -Aramboly	..	7	„
Thuckalay-Monday Market	..	7	„
„ -Eranial	..	7	„

Most of these syndicates, such as the Quilon-Punalur Motor Transport Service, raise their own share capital. For example, in this concern there are 200 members with a total of 2,000 shares. They own 32 buses and run 7 routes. Six buses ply on the Quilon-Kottayam route nine each on the Quilon-Punalur and Quilon-Shencottah Roads, 3 on the Quilon Town Service and five on three other minor routes. They have their own Booking clerks who issue tickets at each stand, which is under the superintendence of a Stand Manager. On the Quilon-Shencottah route there are stands at Kottarakara, Pulanur and Shencottah. At Themmala there is only a Booking clerk. It is the duty of the Stand Manager to fill in the Trip Sheet which corresponds to the Way Bills of the Transport Department. The drivers and conductors are paid on a daily basis and are under the supervision of checking Inspectors just as much as the conductors of the State Transport Service.

Big as these organisations are, their staying power is great, so much so, the competition between these prior

to monopolisation was great. The beneficial result of the State Monopolisation scheme was a putting down of this. At the commencement of the service, it was felt that many conductors and drivers would be thrown out of work and thus cause serious unemployment. Steps were therefore taken by the State to absorb most of the drivers that drove buses on the Trivandrum-Cape Comorin route who proved to be quite efficient for the purpose. A test had to be undertaken by the intending candidates to prove their efficiency. Some of the checking inspectors who had put in good service were also provided with jobs as inspectors, while conductors, most of whom were found ill suited to the post, were allowed the option of offering themselves as parcel clerks on a pay of Rs. 10. A new spirit was breathed into the grade of conductors, and Travancore has been the first State to set the unique example of making it compulsory that all conductors should be graduates. By doing so, a new atmosphere of culture and etiquette is provided and the passengers have the benefit of efficient young men who recognise the importance of courteous treatment in all business undertakings. Transport is a service and the people who offer it are purveyors. It is just as much interested in its clientele as the Sales Department of any business establishment. The transport people have to enlist the sympathy of their passengers by considerate treatment. This is a lesson that the Indian Railways have been all too slow to read. The discourtesy of some railway servants has been the subject of parliamentary discussions, and all honour is due to the State of Travancore for its ready recognition of this fundamental business truth.

Not only has the moral tone of the service improved, but also the motor transport industry has been rendered stable and efficient. Monthly pay, instead of daily wages, infuses a spirit of confidence into the operatives and makes them work with enthusiasm. By making payment regular,

Road-Rail Transport

it makes the recipients conscious of the fact that, as long as they work efficiently, they need not fear the spectre of unemployment. Stability gives birth to a sense of discipline, which is the mother of efficiency. Apart from these abstract improvements, the most tangible benefits are to be seen in the punctuality and comfort of travel. The buses run on time and in this age of bustle and speed nothing appeals more than punctuality. The knowledge that a particular bus arrives at, or departs from, a particular stand or stop at a certain time is most reassuring and obviates the unhappy spectacle both of the eager passenger sprinting the last hundred yards as if he were some competitor at an Olympic meet and the stoic individual who waits for the next bus with philosophic resignation. Comfort is vouchsafed for by the generous proportions of the vehicles. The buses on long distance traffic have a seating capacity of twenty-three, while those on town service have twenty-one. The rear of the vehicle is fitted with twin balloon tyres which absorb shock and minimise discomfort. Two of the front seats are upholstered and classified first class. The charge for the use of those seats is 50 per cent additional to the ordinary fare. The other seats have all wicker bottoms. It must, nevertheless, be mentioned that these seats are not as comfortable as they ought to be, and as many of these have given way plywood planks had to be requisitioned to serve as base-boards. It is therefore felt that this invidious distinction between first and ordinary class could be removed and all seats be moderately padded so as to add to comfort. Surely, expenditure on this would be no unwise investment.

Finally, there has been a decrease in the punishments inflicted by the Police Department for violation or infringement of the Motor Vehicles Regulation Rules. For example, in 1112, one hundred and eighty-eight permits

were suspended, whereas in 1113, there were only one hundred and thirteen. In 1112 the number of pass books suspended was 239. In 1113 the number fell to 178. There was, however, an increase in the number of motor driving licences suspended from 59 to 133. The accident figures for the corresponding years show improvement due to the greater safety of travel. All that improvement is partly, if not entirely, due to the withdrawal of privately owned vehicles from the Trivandrum-Nagercoil-Cape Comorin Section and the operation thereon of the State buses.

Conclusion.—This concludes our survey of the State Transport System of Travancore. From this we deduce that the experiment has been an unqualified success and that the net profits of Rs. 61,000 for half a year is very encouraging. The service offered on the routes operated is adequate and efficient and the system is run economically. Some features such as the appointment of Graduate Conductors, introduction of the parcels system, return and concession tickets and hiring of the State buses for private hire are novel and deserve commendation. The operating costs are kept down, due to the low pay of the employees. Statement No. C. 10²⁰ gives the number of employees under each grade and the scales of pay thereof. The operating cost is also very low and works out to about 0·3 anna per mile, while on the London Transport System it is nearly four times as much. This economy of operation should argue for the extension of services. Travancore, it has been pointed out, has to depend upon a net work of roads and canals. The number of routes on which the State system operates bears no comparison with the total number available. For the year under review there were 41 routes in the district of Trivandrum, 27 in Quilon and 50 in the district of Kottayam, thus making an aggregate of 118

Road-Rail Transport

routes for the whole State. This, it must be emphasised, is the actual number on which the vehicles are plying. There may be many more which could be found workable if the State could take the necessary steps. Trivandrum is ill served by railways, so that the bulk of trade has to depend upon road and backwater transport. Canals play a very important part in the economy of the State and are an asset of great value. Backwater transport is the cheapest as can be seen from the fare of two annas for a distance of sixty miles, which is something phenomenally low. The State would therefore do a wise thing if it monopolised the entire road and water transport and placed it on a stable basis. The approximate receipts from this would be about thirty-five lakhs and the estimated net profits, seven lakhs of rupees, which would be sufficient to meet the cost of maintenance and upkeep of the roads and canals. By so doing, the Public Works Department would be saved much of its expenditure. Lastly, the Transport Department should not confine itself to passenger traffic, but should also offer to carry goods. The parcels system, however beneficial it be, by itself cannot tackle the problem. Under existing rules, the maximum weight of luggage is fixed at 112 lbs. or one cwt. Travancore possesses inexhaustible supplies of timber and other forest woods, besides ivory, fisheries, cocoanut and cocoanut products, spices and rubber. So, there is bound to be considerable heavy traffic which may be either carried by road or diverted to the canals economically. The field is therefore open and the prospects are bright. Nevertheless, the task is really prodigious and calls for cool calculation. The ground being new, there is great need for caution. But, when one weighs the prospective gains in the scales, the attempt looks most attractive and is bound to be a success. What is needed above all is sagacity and enterprise—the twin levers of progress.

CHAPTER X

THE STATE TRANSPORT SYSTEM OF HYDERABAD

LYING between $15^{\circ} 10'$ and $20^{\circ} 40'$ N and $70^{\circ} 40'$ and $80^{\circ} 35'$ E, the dominions of His Exalted Highness the Nizam with a population of 14,436,148 cover an area of 82,698 square miles. A large part of these lies in the Deccan—a flat, hot, arid plateau. Hyderabad has the invaluable advantage of being drained by the river basins of the Krishna and the Godavari. As a consequence, the economic resources of the State are very great. One might even hazard the remark that it owes its primacy amongst the Indian States to its size and advantageous location. Wedged in between the presidencies of Bombay and Madras on the one hand, Mysore and the Central Provinces on the other, Hyderabad lies in the heart of Peninsular India forming a link between the North and the South. Broadly, it can be geographically divided into the two parts of Marathwada and Telingana—the former being an area of wheat and cotton, and the latter of rice and jowar. Thus, on its west, the State lies in the region of the great Deccan Lavas, which is famous for its rich black cotton soil to which the State owes much of its wealth. The importance of this is testified by the fact that, for the year ending October 1936, the number of country carts laden with cotton at seven markets was 1,61,575 out of a total number of 3,73,450, the rest of the 2,11,875 carts being laden with other kinds of agricultural produce. Again, the average yield in tons for the years 1933-36 for the whole of India was 50,63,000; out of this Hyderabad's share was 5,41,000 tons or nearly 10% of the Indian produce. The cotton ginning and pressing industries alone, it may be added, provide employment for 3% and $2\frac{1}{2}$ % respectively of the total working population of men and women. Cement is another of those industries that promises a great deal.

Road-Rail Transport

Started in 1925, with a capital of Rs. 35 lakhs, the industry has developed by leaps and bounds and in 1936 could produce 125,945 tons. Hyderabad is also fortunate in having two groups of collieries at Singareni, in the Yellanadu taluq, and at Tandur in the Asifabad taluq, the former with a productive capacity of 2,000 tons a day, and the latter, of 1,500 tons. These apart, the State also possesses vast resources in oil and oil seeds; and in 1935 it exported 343,005 maunds of groundnut oil and 158,889 maunds of castor oil in 1936. The acreage under groundnut was 1,059,000 in comparison with 2,493,000 of Madras; that under castor being 834,000, as against the 262,000 acres of Madras. The foregoing facts and figures are primarily intended to impress the immense potentialities of the state and the need for an adequate system of transport to tap and develop these vast resources. Hyderabad completed the ramifications of its railway system some time back, and has now ventured to link it up with a State road transport scheme which is at once a study and a model in pioneering.

Hyderabad offers the unique example of an Indian State endeavouring to effect a co-ordination between its transport services. In 1939, the total mileage of railways within the State was 1,493, out of which 1,302, were owned by the State; this latter forms 3.17 per cent of the total mileage of India, excluding Burma. In other words, there are 1.03 miles of railway to every ten thousand of population. As against this, the route mileage of road services is 4,069. As both these forms of transport are worked under the direct control of the State, a brief sketch of railway policy and its results may not, it is hoped, be out of place. On the other hand, it should be essential for a due appreciation of the principles of co-ordination.

In view of the strategic position of Hyderabad, the question of linking it up with the rest of India came up

Hyderabad Transport System

for consideration from very early times. In fact, the first proposals date back to the early sixties, though it was not till 1874 that the first stretch of 117 miles of line was laid between Secunderabad and Wadi. Two hundred miles of rail were again laid before the year 1889. The year previous to the end of the century marks a landmark in the history of railway development when Secunderabad was connected with Manmad, thus enabling the port of Bombay to have access to the rich resources of the Hyderabad State. In 1928 the main line between Secunderabad and Dronachalam was constructed. The opening of the line between Kazipet and Balharshah in the same year was of the greatest significance, not only to the state but also to India, since its construction opened up the shortest route to North India. It is over this section that the Grand Trunk Express traverses after branching off from Bezwada on the M. & S. M. Railway and joins the Great Indian Peninsular Railway system. Previous to the opening of this line, intending passengers to Delhi had either to go to Bombay or go *via* Nagpur, both of which were circuitous and entailed considerable difficulties in transshipment. Now, the distance between Madras and Delhi is shortened considerably and it is only 1,361 miles. Apart from these, there are a few short feeder lines. A short line of twelve miles between Janikampet and Bodhan is intended to serve the sugar factory at the latter place. On the 10th April 1938, H. E. H. the Nizam issued a royal firman for the construction of a line, hundred and one miles long, from Mudkhad to Adilabad. This was sanctioned in preference to the Adilabad-Nandar route which is 21 miles longer.

The financial success of the railway enterprise taken up by the State since 1930 has been considerable as will be seen from the annual reports of the Nizam's State Railway. The total capital expenditure on the Railways during the

Road-Rail Transport

year 1938-39 was Rs. 5,68,002 as against Rs. 8,18,341 in the previous year thus showing a fall of nearly 25 per cent. The capital at charge has remained almost constant at Rs. 18.06 lakhs. Out of the railway expenditure referred to, 2.54 lakhs were allocated to the construction of the Mudkhad-Adilabad line. Comparing the two years 1937-38 and 1938-39, there has been a decrease of Rs. 2.44 lakhs in the gross earnings which amounted to Rs. 242.62 lakhs in 1938-39. Alongside of this, there has been an increase in working expenses from 115.88 to 118.65 lakhs representing an increase of 2.77 per cent. The operating ratio likewise showed an increase of 3.81 per cent. The following table gives a statement of the main statistics available:¹

	1936-37.	1937-38.	1938-39.
	Rs.	Rs.	Rs.
Gross earnings ..	22,880,377	24,515,138	24,261,742
Working Expenses ..	11,405,138	11,588,513	11,865,741
Operating ratio (including depreciation fund) per cent ..	49.8	47.3	48.9
Passengers ..	8,111,547	8,795,060	9,086,753
Passenger Receipts ..	5,823,341	6,178,096	6,155,636
Tons carried ..	2,504,085	2,795,832	2,881,977
Average ton mile receipts Ples ..	7.52	6.95	6.94
Goods receipts ..	15,364,994	16,572,705	16,484,390
Gross train mile earnings ..	6.86	6.57	6.24
Net train mile earnings.	3.44	3.47	3.19
Train miles ..	3,336,085	3,729,906	3,885,704

The Railway handles considerable goods traffic. Apart from coal, which accounted for 1,194 thousand tons in the year under review, namely 1938-39, gram and pulse account for 204,000 tons yielding a revenue of 15.26 lakhs. The earnings from rice equalled 8.94 lakhs of rupees, and groundnuts contributed 10.41 lakhs. Pressed cotton yielded a revenue of 4.87 lakhs. There was a decrease in the earnings under this last head due to the reduction

1 Annual Report of H. E. H. Nizam's State Railway, 1939.

Hyderabad Transport System

in the rate basis from 19·7 pies per ton mile to 18·8 consequent on road competition. The increase under gram and pulses has been due to increased foreign outward traffic. The table below gives relevant figures for a few of the important commodities. The figures relate to earnings and volume, the former being in lakhs of rupees and the latter in thousands of tons.

		1929-30.	1935-36.	1936-37.	1937-38.	1938-39.
Raw pressed cotton—						
Volume	..	72	40	62	48	20
Earnings	..	14.12	7.16	11.78	8.89	4.87
Gram and Pulse—						
Volume	..	98	188	181	216	204
Earnings	..	9.87	13.79	12.67	14.16	15.26
Jawhar and Bajra—						
Volume	..	53	24	23	51	55
Earnings	..	4.35	1.75	1.51	4.33	4.35
Rice—						
Volume	...	103	95	96	97	100
Earnings	..	10.77	8.31	8.32	8.57	8.94
Wheat—						
Volume	..	15	36	36	37	38
Earnings	..	1.62	3.81	3.47	3.48	3.66
Groundnuts—						
Volume	..	..	53	107	97	149
Earnings	..	..	2.77	6.48	6.76	10.41
Linseed—						
Volume	..	21	41	24	32	36
Earnings	..	1.80	3.43	2.07	2.92	3.24
Total Volume	..	2,264	2,288	2,504	2,796	2,882
Total Earnings	..	148.13	136.60	152.90	164.69	168.94

The administration of the railways is divided between the Commercial and Transportation Departments. An important function of the Chief Commercial Manager is to help the Industrial Fund Trustees in the industrial development of the State.

ROADS. The total road mileage of the Dominions is over 5,000, exclusive of Local Fund roads, of which 3,000

Road-Rail Transport

are metalled. They are classified into three groups viz. first, second and third. The first class roads connect the Capital with important district and trade centres; the second class roads link the District centres with the 'tashils' or otherwise act as feeders to the railway. The third class roads are the least important, and are mostly village roads intended to link the villages with the 'tashils'. Apart from these, there are developmental and Ghat roads. The first class roads have a total width of thirty feet with a wearing surface of 15 feet; the second class have 24 and 12 feet respectively, and in the case of the third class 21 and 9 feet. The developmental roads lie through forested regions such as Asifabad, Warangal and Karimnagar. Part of them, also, lie in the irrigated and mining districts.

There are a number of rivers coursing their way through the Dominions, so that for an effective net-work of roads these have to be spanned by bridges. The most important rivers are the Godavari, the Tungabhadra and the Bhima. The State Development Department has, in the course of the last quarter of a century, constructed a number of bridges.

The following table taken from the brochure '*The Economic Life of Hyderabad*' gives a list of the more important ones.

Name of Bridge.	District.	Size.	Cost in lakhs.
1. Godavari at Shahgadh	Aurangadbad	17 spans 60'	7.61
2. Godavari at Nanded	Nanded	20 „ 60'	9.20
3. Godavari at Soan	Nirmal	36 „ 60'	10.58
4. Manjra Bridge at Salorah	Nizamabad	100 „ 8'	1.77
5. Manjra Bridge at Sangareddy	Medak	12 „ 60'	5.00
6. Manjra Bridge at Nisamsagar	Nizamabad	19 „ 60'	4.50

Hyderabad Transport System

Name of Bridge.	District.	Size.		Cost in lakhs.
7. Manjra Causway at Sangam	Bidar	14	„ 20'	1.32
8. Manjra Causway at Latur	Osmanabad	35	„ 10'	0.76
9. Kadium Bridge	Asifabad	12	„ 40'	2.22
10. Bhima Bridge	Gulbarga	19	„ 60'	9.37
11. Benthora Bridge	do.	9	„ 60'	2.98
12. Dunda Bridge	Aurangabad	7	„ 40'	0.93
13. Muse Bridge	Nalgonda	18	„ 60'	3.35
14. Naranja Bridge	Bidar	9	„ 20'	0.58
15. Mannar Bridge	Nanded	10	„ 40'	1.86
16. Kagna Bridge	Gulbarga	9	„ 25'	0.43
17. Kistna Bridge	Raichur	35	„ 60'	9.50
18. Bensura Bridge	Bhir	23	„ 20'	1.07
19. Sidhapana Bridge	do.	9	„ 40'	1.16
20. Muneru Bridge	Warangal	14	„ 25'	3.00
21. Karamate-Usmani Bridge	Karimnagar	16	„ 60'	3.32

Hyderabad, among Indian States, has the largest mileage of dust proof concrete roads. During the five years 1930-35, 56.9 miles of roads were constructed. This was decided upon in view of the comfort and safety of these roads and, being less susceptible to wear and tear, the cost of maintenance of a square yard varies from 1½ to 2½ pies per annum. The side beams wear off more quickly and cost an anna and a quarter for maintaining a square yard.

There is a plentiful supply of good roads in the State ideally suited for highway operation. The natural outcome of this was that they were overrun with a number of motor vehicles run on individualistic lines. Apart from the new monopolistic concerns, the majority of the services were one-man concerns in which the owner was himself the driver. By making a small investment on the bus, the bus was placed on the road. This easy accessibility to the roads led to great congestion and acute competition. The services were haphazard and each one competed with the other in trying to draw all the traffic it could to

Road-Rail Transport

itself and this was specially great during periods of heavy traffic. This road-pirateering caused intense danger to the public and the accident figures rose in consequence. More than anything else, the railways were deprived of their legitimate traffic by the road vehicles taking the cream off the traffic by offering to carry at most uneconomic rates. Such was the state of affairs when the State decided on the 1st April 1930 to own the railway lines in its dominions.

When the railways became State owned, the Government awoke to the dangers of the situation; since the state of affairs was not only chaotic but, there was a definite fall in railway revenues due to the road competition. With a view, therefore, to conserving the advantages of State ownership, the Nizam's Government decided to enter the field of road motor operation as from the 15th of June 1932. By doing so, Hyderabad set the example of being the first Indian State to monopolise its transport system. It was first proposed to work the scheme as an experimental measure, and four and half lakhs of rupees were allocated for this purpose. It was decided to completely monopolise four hundred miles of district roads. In the suburbia of Hyderabad and Secunderabad, however, the State buses worked in competition with the private lines. The nucleus of the service consisted of 27 buses which soon proved to be very popular and called for extension, so that, by March 1936, the number of vehicles rose to 118 and the route mileage increased to 1,364. These figures by themselves testify to the excellence of the undertaking which increased from success to success. There were two monopolies that were operating a total mileage of 2,400. Needless to say, they were very big and carried on considerable traffic. The State, therefore, determined to take up these routes for operation on the termination of their contracts in 1936 on payment of

Hyderabad Transport System

a just return to them. Thus, in 1936-37 the total sphere of State operation increased to 3,977 route-miles and the number of rolling stock to 318.

For the purpose of undertaking road transport, the roads of the State were classified as scheduled and non-scheduled, the former being selected for State operation. The total length of these was 4,620 miles in 1937 of which 4,000 were covered by the State system, 357 by private concerns, and 263 were under a private monopoly. Simultaneous with these developments, a new Motor Vehicles Regulation code was enacted in October 1936 whereby the issue of permits to motor buses was restricted and, by increasing the rate of taxation, a healthy check was placed on uneconomic undertakings. The rules enforced that the vehicles should be fit enough to offer comfortable means of travel and the maximum life of a vehicle was fixed at six years, after which they were summarily condemned. The policy adopted was one of slow elimination so that, though the suburban services in Secunderabad and Hyderabad were not monopolised, the field for private operation was gradually curtailed by refusing to renew permits to all private undertakings. The effect of this, as has been pointed out in 'The Economic Life of Hyderabad,' was to convert the passenger vehicles so driven off from the monopolised routes into road lorries. To quote the brochure: "Immediately on being displaced, most of the bus owners either came to Hyderabad or Secunderabad and obtained permits in the suburban area or converted their buses into lorries for the transport of goods with the result that, in addition to intensive passenger bus competition in the suburban area, a new phase of competition came into existence diverting to the road a large amount of goods traffic which had previously been conveyed by rail." ² This road-rail

² The Economic Life of Hyderabad, p. 101.

Road-Rail Transport

competition still continues, and has forced the State to reduce their rates to meet it. New regulations are being considered for the effective checking of this sinister influence.

The Government has after the monopolisation of the routes raised the basis of rate making to 6 pies per mile, which is admittedly higher than that on their Railway. The idea in raising the rates was to divert traffic to the railway, especially heavy traffic for which the railway is best suited. The profits accruing from the operation of the road services is credited to a Road Fund, the proceeds of which are utilised in the further development and extension of highway services. The policy has been to make the profitable routes pay for the less profitable ones, and thus give the public the advantages of a stable and adequate road service. With regard to goods traffic, the State desired to leave to the bullock carts their legitimate sphere of operation and have been wary in the grant of permits to public freight vehicles. Permission is granted only in the case of large industrial towns; and even here, the sphere of operation is restricted to a radius of 25 miles. Thus the ultimate end in view is to maintain the village economy and to help its development by ramifying the transport system so as to afford it marketing facilities which are so essential for the economic prosperity of any country.

Financial Results. The total route mileage operated in the year under review, 1938-39, was 4,069 miles, as compared to 4,017 in the previous year. Of these, the passenger services account for 3,939 and goods services for 429 miles. The total fleet was of 368 vehicles, dwarfing the 54 buses of the Travancore State Service. Of this number, 281 were passenger buses and 63 were parcel vans and goods lorries. The total capital at charge on the entire road system was Rs. 58,14,598. Naturally, the bulk

Hyderabad Transport System

of the receipts is from passenger traffic and the coaching earnings accounted for Rs. 27,50,906 showing a decrease of Rs. 87,089 over the previous year. There was, however, a marked increase in the goods traffic. 52,135 tons of goods were carried, and they accounted for a net earning of Rs. 94,493 as against Rs. 73,156 in the previous year. The extent of the development of goods traffic can well be gauged when it is remembered that in 1934, when the goods service was first started, the earnings under this head amounted to only Rs. 15,386. The total earnings from coachings, goods and miscellaneous items amounted to Rs. 28,65,783 which is nearly a lakh less than the earnings of the previous year. As compared to this, the total earnings of the Travancore State Service for six months were Rs. 3,56,253-22-10. Allowing for the slight difference in the value of the currencies, it may be said that the total earnings for one year would approximate to Rs. 7 lakhs. The passenger miles operated in Hyderabad was 100,223,864. For six months in Travancore it was 13,69,302.4 or nearly 27 lakhs of miles during a whole year. It will thus be seen that both the mileage and earnings on the Travancore System approximate to a fourth of that of Hyderabad. The capital expenditure in Travancore is only about six lakhs, whereas in Hyderabad the capital at charge is Rs. 58 lakhs. It must, nevertheless, be mentioned that this includes the capital on account of goods traffic. Moreover, the route mileage of 4,069 bears no comparison with that in Travancore. The table on the next page gives a vivid picture of the main financial results of the Hyderabad State System.

The fall in the receipts in the year under review has been due to the serious competition of the private competitors and the failure of crops, mainly cotton, the railway earnings from which decreased by Rs. 5.4 lakhs as compared with the previous year. While there was a

ROAD TRANSPORT SERVICES.*

Year.	No. of vehicles	Route miles.	Passengers.	Tons of goods.	Coaching earnings.	Goods earnings.	Miscellaneous earnings.	Total gross earnings.
1933	33	284	1,477,907	..	2,77,606	..	6,216	2,83,822
1934	62	595	3,397,077	..	5,65,801	..	9,980	5,75,781
1935	102	1,232	5,200,106	3,646	9,50,134	15,386	16,366	9,81,886
1936	137	1,354	7,008,715	5,276	12,98,627	19,737	15,575	13,33,939
1937	318	3,977	10,775,552	8,060	22,40,660	33,134	22,679	22,96,473
1938	358	4,017	11,646,557	43,729	28,37,995	73,156	32,385	29,43,536
1939	368	4,069	11,638,189	52,135	27,50,906	94,493	20,384	28,65,783

Note:—The goods tonnage excludes parcels. The coaching earnings include also the earnings from parcels carried by the goods service lorries.

* Figures from page 65 of the Annual Report of H. E. H. The Nizam's State Railway for 1938-39.

Hyderabad Transport System

decrease in the case of coaching earnings, an increase in goods earnings is noticeable. The tonnage of goods showed an increase from 43,729 to 52,135 and receipts therefrom rose from Rs. 73,156 to 94,493. Nevertheless, this increase has not been sufficient to offset the decrease under passenger receipts and, on balance, there is a decrease of Rs. 80,000 in gross earnings. The basis of passenger rates continued to be 6 pies per mile (O.S.) except in the case of short distance traffic, as in Travancore, where some slight concession has been shown. Consequent upon this fall in receipts, the figures for the average gross earnings per vehicle mile fell from 69·3 pies to 64·4. The average number of passengers per bus fell from 13·5 to 12·8, thus indicating a lesser density of traffic.

Turning to working expenses, we observe an increase from Rs. 20,27,545 to Rs. 21,24,539. This excludes the contribution to Depreciation Reserve Fund. If this were to be included, it would come to Rs. 29,22,287. Similarly, the capital at charge shows an increase of nearly two and a half lakhs of rupees. This increase in expenditure is due to the purchase of thirty trucks for the carriage of freight and the construction of a new workshop at Mettuguda. The increase under working expenses has been due to the overhauling of the vehicles, and engine failures. In 1935-36 the cost of repairs and maintenance per vehicle turned out in the Central Workshop was Rs. 725; the next year it rose to Rs. 1,323, and for the year under review, it reached the high figure of Rs. 2,106—an increase of more than 60 per cent, which explains the rise in the working expenses. The working expenses per vehicle mile including depreciation works out to 65·7 pies. As against this, the gross earnings per vehicle amount to only 64·4 pies thus showing a negative value of 1·28 pies in the net earnings. Thus, for the year under review, there has been a net loss in the working of the road services. The

Road-Rail Transport

figures for net earnings reached a maximum in the year 1936-37, when they reached the total of Rs. 3,81,413 with an operating ratio of 83.4. The following figures are noteworthy:—

Particulars.	1932-33.	1935-36.	1936-37.	1937-38.	1938-39.
Gross earnings .	2,82,822	13,33,939	22,96,473	29,43,536	28,65,783
Capital at charge.	4,19,473	22,50,696	54,54,536	55,75,501	58,14,598
Working Expense (including depreciation) ..	2,47,932	10,92,914	19,15,060	28,07,363	29,22,539
Net earnings ..	35,890	2,41,025	3,81,413	1,36,173	—56,756
Operating ratio..	87.4	81.9	83.4	95.4	102.0
Cost of repairs and maintenance per vehicle ..	..	..	725	1,322	2,106
Net earnings per vehicle mile. pies.	10.3	14.8	11.9	3.21	—1.28
Average No. of passengers per bus ..	14.4	15.3	18.8	13.5	12.8
Average load per goods vehicle (tons). ..	..	..	1.66	1.84	2.60

An important point that deserves mention is the lowering in the average working expenses per vehicle mile (including depreciation) by four points from 66.1 to 65.7 pies. This is largely due to the substitution of diesel oil engines in preference to petrol ones. The second cause is the decrease in the number of vehicles under repair. The percentage of passenger buses under repair to the total average number owned fell from 28.4 to 22.9 per cent. In the case of goods and parcels trailers, there was a similar drop from 54.6% to 45.5%. There was, however, an increase from 36.1 to 42.5 per cent in the case of power units. The efficiency of the vehicles on the road can be judged from the fact that there has been a remarkable curtailment in the number of vehicle failures. In 1937-38, there were 2,011 failures whereas, in this year it is only 1,654, and the figures for the number of vehicles repaired show a marked decrease, viz. 261 and 227. Apart from the economies gained thus, there seems to have been a more intensive use of the vehicles as the figures for the vehicle miles per vehicle per day

Hyderabad Transport System

show. There was an increase of six miles in the case of goods and parcels power units.

The economy in the consumption of fuel is due to the substitution of diesel oil vehicles. It was observed earlier that the entire fleet of the Travancore State Transport System consists of diesel oil buses fitted with Perkins engines. On the United Motor Service, which is easily the biggest private service in this Presidency, a number of vehicles is fed with this oil. By doing so, the fuel expenses are kept down. The advantages of using diesel oil in preference to petrol have been already referred to in the previous chapter. It would now be worthwhile making a comparative study of the cost. In 1938-39 the price of a gallon of petrol was Rs. 1-8-0 while that for a gallon of diesel oil was only 0-6-0. The fuel cost per vehicle mile was 30-2 and 4-98 pies respectively. It must be observed at the same time that while one gallon of petrol gives a mileage of 10-8, a gallon of diesel oil gives 15-9 or nearly 50% more than petrol. It will therefore be seen that petrol is six times as costly as diesel oil.

Co-ordination. The co-ordination of transport services is best seen in the system of out-agencies the State has introduced. On the South Indian Railway too, there are a number of railway out-agencies; the number of such agencies is 13. The purpose of such out-agencies is to act as feeders to the railways and to operate in harmony, with them, instead of offering competition. One of the first essentials of such a system is the running of the road vehicles to the train timings, so as to feed the railways with traffic, and to carry traffic from the railhead into the interior. On the Nizam State Railways, there are a dozen out-agencies, and co-ordination between the two services is effected by frequent meetings between the road transport and railway commercial departments to devise ways and means of helping each other. It has already

Road-Rail Transport

been pointed out that the aim in view is to maximise the traffic receipts of the railways, and this has been achieved by making the basis of road charges higher in comparison with that for the Railway. By so doing, the traffic is diverted to the Railway and the advantages accruing from increased traffic are preserved. Any loss on the road system, as for example was the case during the year under review, is compensated by the gains on the railway. Thus, each tries to subsidize the other and, by doing so, traffic is maximised. Twenty thousand, five hundred and eight tons were carried at these out-agencies in 1937-38, the earnings wherefrom were Rs. 2,46,547, of which the Railway's share was Rs. 1,97,512, and the Road's Rs. 49,035. In the year under review the total earnings were Rs. 3,20,836, thus showing an increase of Rs. 74,289. The shares of the road and rail for each out-agency are as follows:—

1938-39.					
Out-Agency.	No. of months of operation.	Tons carried.	Railway earnings.	Road earnings.	
Karimnagar ..	12	388	5,327	2,790	
Mashirabad ..	12	3,492	56,240	3,024	
Nalgonda ..	12	916	4,063	3,126	
Suryapet ..	12	5,435	26,611	15,541	
Adilabad ..	12	1,787	15,513	12,355	
Armoor ..	12	266	4,838	809	
Aurangabad ..	12	8,150	42,595	6,083	
Bhaisa ..	12	4,135	44,994	10,438	
Bir (Nizam) ..	12	2,890	16,409	17,636	
Medak ..	12	945	9,443	1,996	
Nirmal ..	12	561	6,211	3,410	
Azamabad ..	9	1,683	9,951	1,433	
Total ..		30,648	2,42,195	78,641	

From the foregoing, it is clear that the most important out-agency is Aurangabad which is served by the railway station of the same name 3 miles off. The rate charged is 1.67 pies per-maund-mile and the average earnings (goods and parcels) per vehicle mile and the average load per

Hyderabad Transport System

vehicle were 62·1 pies and 1·65 tons respectively. Adilabad is the out-agency that is farthest from rail-head. It is 92 miles distant from Nizamabad; as a result, the rate per maund mile is only one pie. The least rate is $\frac{1}{2}$ a pie charged at the Nalgonda out-agency 44 miles from the Bhongir railway station. The maximum rate is 2 pies and is charged at Mashirabad and Azamabad. In the appendix a detailed statement of the average earnings per vehicle mile, the average load per loaded mile, the rate per maund mile and the distance, is given for each out-agency.³

From the foregoing, it is seen that Hyderabad has been a pioneer in the field of transport operation. In keeping with its position as the premier State in India, it has carried out extensive schemes of co-ordinated road and rail services which are bound to make for the economic development of the State. It has 18·1 miles of railway for every thousand square miles, and the administration of the railway compares favourably with that of the Indian Railways. The Government has always had the development of the State in view and has sanctioned schemes for that purpose as will be evidenced from the projects for a paper mill at Kothepetta and an oil mill at Safdarnagar but, where the State scores over other native States is in its extensive monopolisation of more than 4000 miles of road. The road transport department has a huge establishment with a staff of 1,720 subsidized by the railway, the main purpose of which is to preserve to the railways its legitimate traffic and to beat off all competitors. Not only is co-ordination effected in respect of road transport, but also extends to Air Transport, the gross earnings from which in 1938-39 were Rs. 97,244. Thus, a stable and well knit transport system is provided for the public, which is so very essential to economic well being.

3 *Vide* Appendices F. 1 and F. 2.

CHAPTER XI

THE UNITED MOTORS SERVICE OF COIMBATORE.

WE have now considered the two transport systems of the States of Hyderabad and Travancore which have been the pioneers in state transport undertakings. These were taken up specially for detailed consideration because, being under Government aegis, the form of their organisation should provide an object lesson for others. Especially now, with the increasing cry of municipalisation of road services, the importance of a study of such schemes is bound to be all the greater. In the Presidency of Madras, as elsewhere, there are a number of large transport undertakings that operate on up-to-date lines. There are a number of large combines that run passenger services in the metropolis of Madras. But far more important than metropolitan traffic is suburban transport; since it is only there that the greatest scope for competition, not only with the railways but also inter-road competition, exists. One of the largest passenger transport undertakings in this Presidency is the United Motors Service of Coimbatore. A glance at the railway map of South India¹ will show that this area is not well served with railways. To the North-east of Coimbatore runs the broad-gauge line of the South Indian Railway which extends westwards to Shoranur and thence to Mangalore and Ernakulam. Erode is linked up with Trichinopoly by the broad-gauge line, while there is a branch line connecting Dindigul, on the metre-gauge main line, with Podanur passing through Palni and Pollachi. The Nilgiri Railway serves the hill stations of the Nilgiris and a small metre-gauge line between Pollachi and Olavakkot serves Palghat and Kollengode. The district is of great industrial importance, since Coimbatore is the centre of the cotton-mill industry in South India. There is, thus, great scope for the

1 Appended at the end of the book.

United Motors Service of Coimbatore

provision of adequate road services to tap the resources of the area. The U. M. S. of Coimbatore has the largest share in the traffic of this district and is run on quasi-monopolistic lines on certain routes. Some idea of the strength and importance of this concern can be gained when it is said that in 1937 the number of buses actually on the road was 185 and the route mileage served was nearly 1500.² If this were to be compared with the Travancore system, it would be found to be far greater in size, as the number of its vehicles itself is more than thrice that of the latter. It would be therefore interesting to briefly sketch the growth and organisation of this vast transport system.

The U. M. S. has as its Managing Agent a man of considerable initiative. He formed the union in 1933. The beginnings of the service were very modest, almost obscure. In 1920 the present Managing Director started his career as a vendor of transport with one bus, of which he was both owner and driver rolled into one. The route mileage operated was only forty. By dint of ability and experience, it grew from strength to strength. The condition of road transport in those days was none too good. It was highly disorganised and individualistic in character. Most of the concerns operating were one-man concerns, intent upon driving their rivals off the road. It was under such unpropitious circumstances that this pioneer approached his colleagues in the field and started the U. M. S. as it is today in 1933. It is an amalgamation of fifteen different concerns united together and run as a single concern. It was not possible to find out the financial terms of the union, since they have been kept a business secret. It was just possible to study the mode of operation which, by itself, is highly instructive.

2 The route map of the U. M. S. service is appended.

Road-Rail Transport

In 1921 there was only one bus and gradually the number increased to 70 in 1929—the pre-depression year. It was in this year that the company was registered as a limited liability concern. The depression had no ill effects on the development of the concern and it continued to grow in size till the maximum of 167 was reached in 1938. A complete statement of all details for the U. M. S. Transport Group is to be found in the Appendix.³ In 1936 there were 170 buses in this group running a total mileage of 25,500 per day or over 9 millions annually. Nevertheless, inspite of the prodigious size of the combine, accidents were very few, *viz.*, 7, of which only one was due to the inefficiency of the staff. These figures speak eloquently of the concern. For the past two years, the district of Coimbatore has been suffering from the scourge of famine. As a consequence, there has been a fall in the receipts due to lower purchasing power. It was, therefore, felt necessary in 1939 to reduce the number of vehicles on the road to 140. The total investment exceeds ten lakhs of rupees and the monthly pay-bill comes to nearly Rs. 17,000 or two lakhs of rupees per year. The mileage covered is nearly 17,000 and that of the bus trips is over 500.

The organisation of transportation is on up-to-date lines. A separate Traffic Department constituted at the Head Office controls the entire traffic. The total number of routes operated at present is forty-seven. The longest of these is the Coimbatore-Bhavani and Erode-Dharpuram *via* Vellaikoil routes. The mileage in both cases is 70 and the number of buses allocated is 1 and 2 respectively. Each bus has to perform one round trip (R. T.) consisting of a journey forwards and another backwards so that the mileage operated by each bus per day amounts to 140. There are a number of long distance routes. Fourteen such routes are more than a fifty

3 *Vide* Appendix D. 3.

United Motors Service of Coimbatore

miles, making an aggregate of 800 by themselves. The traffic of the entire system is controlled at the Head Office, as also the Branch Offices which are located at all the important centres. The number of such branch offices is 11. Each branch office is a complete unit by itself. It has a booking office, a garage, and service station to attend to repairs and maintenance and is well provided with waiting halls for passengers. The bus station at Palladam is a model for all to copy and is as good as anything on the Travancore System. Located at a distance of 23 miles from Coimbatore, it is an important bus junction on which eight routes converge. It has a floor area of 22,000 square feet and has been built at a cost of Rs. 45,000. This bus station is probably the biggest in India and, during the peak period, there were daily 70 arrivals with a total of 1,500 passengers. The station has a commodious garage for housing the vehicles and has extensive accommodation for waiting passengers. There is a waiting room got up in such style that some of those on the railways, would make a poor comparison. A workshop is attached to the station for undertaking repairs and maintaining the vehicles in running condition. More than everything else, an excellent restaurant is housed within the premises of the station which incorporates modern culinary devices and ensures sanitation.

The details of the running of the service are just the same as on the other systems, the conductors being responsible for the collections and the checking inspectors for exercising control on the line. The number of the latter is 18. Each branch office is under the control and jurisdiction of an Assistant Manager. An important feature that deserves special mention is the constitution of a bin-card section. The cards, samples of which are given in the Appendix,⁴ are drawn up from the data submitted

4 *Vide* Appendix G. 2.

Road-Rail Transport

by the conductors and the checking inspectors and form the most complete statistics needed. The data pertain to both income and expenditure. On the receipts side, the figures relate to the total miles run, the memo collections, the way collections and total collections. On the expenditure side, details regarding petrol, oil and grease, tyre and tubes, batta, spare parts and total expenses are given. By comparing the figures for receipts and expenses, the net earnings, whether credit or debit, are arrived at. All these data are ranged per bus, per route, conductor and driver. It will, therefore, be seen that there is absolutely no scope for any mis-calculation whatsoever. The figures from the card relating to the conductor would serve to check those relating to the bus and driver. These data will therefore serve to indicate the financial position of every route. From the figures so collected, weekly and monthly statements are prepared so that the science of maintaining statistics is reduced to a fine art.

Let us take the Dharapuram-Dindigul line for consideration (see Appendix).⁵ The number of the bus is given *e.g.*, 1693, as also the names of the month, conductor and driver. The information is collected for every day of the month. The mileage alternates between 90 and 180 every other day. The petrol consumption for running 90 miles is six gallons, with half a gallon of oil. The total expenses including batta, etc. come to Rs. 9-8-6 against a total collection of Rs. 22-8-6, thus showing a net credit of Rs. 13. These figures pertain to 3-7-1939. If we look into the data for 18-7-1939, we will observe that the mileage on that day is 180. The petrol consumption is 12 gallons costing Rs. 16-14-0 and, including batta of Rs. 1-7-0 and oil and grease of Re. 0-4-3, the total expenses amount to Rs. 18-9-3. The collections amount to Rs. 43-9-0 thus showing an excess of nearly Rs. 25. On the reverse side

5 *Vide* Appendices D. 8 and D. 9.

United Motors Service of Coimbatore

of the bin-card, details of the collections are given. Thus, for example, out of this total collection of Rs. 43-9-0 on the 18th, Rs. 29-2-0 represented the value of memo collections and Rs. 14-6-9 way collections. By memo collections is meant the tickets issued at the booking office at the commencement of journey. Basing on the data available for these two days, one would conclude that the total excess of receipts over expenses amount to nearly two and a quarter annas per running mile. The figures relate to each day of the month. But it is not every day of the month, that there would be an excess to the credit of the transport undertaking. On certain days, due to breakdowns, punctures or accidents, the expenses would be much higher than what it normally should be. Taking up the same tabular statement, it would be observable that on the 14th July, 1939, the mileage run was just the same *viz.*, 180; the petrol consumed was likewise. Total receipts were Rs. 40-1-6, which is about Rs. 3-8-0 less than that on the 18th. Nevertheless, there has been a deficit in virtue of the fact that Rs. 27 is allocated to spare parts. All these figures have to be collected, collated and studied before the results for the month can be calculated.

From these daily figures, weekly statements are prepared and classified under the heads already shown *viz.* petrol, oil and grease, tyre and tubes, spare parts, batta and total expenses. On the credit side, information regarding the mileage run, the way collections, memo collections and total collections are given. Monthly and weekly statements are subsequently prepared from the daily figures. Taking the Pollachi line as an example, for November 1937 the petrol consumption was 1,294 gallons and oil consumption 40, both together accounting for an expenditure of Rs. 1,932-5-6. The total expenses inclusive of batta, spare parts and other expenses totalled Rs. 3,017-11-6. Against these, the collections for the month came to Rs. 7,652-13-0

Road-Rail Transport

resulting in a surplus of nearly Rs. 4,635. The total number of miles operated during the month was 17,706. The net earnings per mile amount to about Re. 0-4-2. The first half of the statement (*vide* Appendix)⁶ gives the working expenses and the second half, the receipts as also the total net earnings and the earnings per mile. There is no special column opened out for this last item so that it is usually written in the credit or debit column thus causing some confusion. It will be obvious that the weekly figures for the total expenses in the second half of the statement tally with those of the first half. This apart, they will have to agree with the weekly totals made in the monthly bin-cards which give expenses and receipts for every day in the work, *e.g.*, Dharapuram-Dindigul route referred to in the previous paragraph. Since different such cards are prepared per driver, per conductor, and per bus, the details from every one of these will have to tally with each other. Hence, these figures for daily, weekly, and monthly collections and expenses, are highly useful and constitute a ready reckoner. It is unfortunate that this bin-card section located at the Head-office at Coimbatore has been temporarily closed down as a measure of economy, consequent on falling receipts, due to the ravages of famine. In the absence of these card-indexes, it has not been possible to get the respective data for the same year, bus, route, conductor and driver. Nevertheless, the data, as collected, are instructive and throw light on the ingenious way of book-keeping followed by the U. M. S. It is to be hoped that, in view of the great value of such statistics, this section will be reconstituted and made to function again. The value of correct and adequate statistics cannot be emphasised too much. They are our best guide in gauging the results of the working of any route.

6 *Vide* Appendix D. 16.

United Motors Service of Coimbatore

Out of the 140 buses running on the entire system, only 15 are run on diesel oil. These are operated on the Coimbatore-Gobichettipalayam, Udamalpet, Mettupalayam, Dharapuram, and Satyamangalam sections. The running costs of a diesel engine are much cheaper than a petrol engine, though the initial costs are greater. Whereas the mileage per gallon of petrol is about twelve, that for diesel oil is nearly double. Diesel oil has the advantage of low vaporisation and smooth running which are so very essential, especially in tropical countries like India. The Managing Agent of the United Motors has made a comparative cost-study of a diesel oil and petrol engine. For this purpose vehicles with the same chassis, the same seating capacity, and run on the same road for the same length of time were chosen for experimentation. The period of study covers five months—during which the expenses of a Dorman Diesel engine fitted on a Bedford Chassis were as follows:—

MILES RUN—17,395.

			RS.	A.	P.
Diesel Oil—651 gallons cost	..		366	3	0
Lubricating Oil—8 gallons cost	..		23	12	0
Total cost	..	..	389	15	0
Expenses per mile	..	..	0	0	4.25

Compared to this the expenses for a similar vehicle fitted with a petrol engine would work out as follows:—⁷

MILES RUN—16,540.

			RS.	A.	P.
Petrol—1135 gallons cost	..		1,365	8	6
Lubricating Oil—26½ gallons cost..			73	3	0
Total cost	..	..	1,438	11	6
Cost per mile	..	..	0	1	4.7.

7 *vide* Appendix D. 18 for detailed study.

Road-Rail Transport

From these figures the conclusion is inevitable that not only is the consumption of a diesel engine half of that of a petrol engine but also cheaper because of the low cost of diesel oil as compared to petrol. The quantity of lubricating oil consumed is also only a third. On balance, therefore, it is six times cheaper to run a diesel engine than a petrol engine. Diesel oil has been taken to cost about 11 annas per gallon and petrol Rs. 1-7-6. Though cheaper to run, a diesel engine is costlier than a petrol vehicle by nearly Rs. 4,000. This extra expenditure may be justified, provided full use could be made of the vehicle, but with our modern method of evaluating the life of a bus at four years, it is difficult to make full use of its economy. It is definitely much cheaper to run, but the high capital costs far outweigh the advantages gained under this head. Moreover, the rate of depreciation is greater in the case of diesel engine as will be seen from the fact that even the Travancore State Transport place it at 25 per cent of their rolling-stock. More than anything else, the amount of noise that they produce is a positive discomfort to the public and the passengers.

The administration of the entire service is run on the most systematic lines and compares most favourably with that of the Travancore State service which, it should be remembered, is run on monopolistic lines directly under the aegis of the Government. When it is further considered that 140 vehicles, as against 54 of Travancore, were running 47 different routes on 1-3-1939 with an average daily mileage of 16,150, the performance is all the more creditable. Both from the point of view of operating efficiency, maintenance of statistics, and control, the U. M. S. stands in a class by itself. As regards operating efficiency, the central workshop at Coimbatore and the other one at Palladam are got up and equipped with the latest and most intricate apparatus. The Central service

United Motors Service of Coimbatore

station is equipped with hydraulic car-lift, high-pressure car washing and greasing, complete wheel and chassis-alignment apparatus, engine tester and a host of other appliances that would make a long catalogue. Besides this, there is a big workshop where bus-bodies are built. The vehicles are maintained in a high state of efficiency and the drivers are trained men. Efficiency among these is inculcated and encouraged by the award of prizes and bonuses to those who keep their vehicles in ship-shape condition and have a clean service record. It is interesting to observe that there are a few drivers who are paid about Rs. 140 per month!

Regarding statistics, there are a host of forms that give the data required. Firstly, there is the Ticket Card wherein all nature of details pertaining to traffic receipts, such as the number of through tickets, and the passengers, the number of bus warrants etc., have all to be filled in. This statement has to be duly signed by the Cashier, the conductor and driver and the checking clerk. The 'collection memo' gives the number of passengers and luggage, the ticket numbers, the place of origination and destination, and the amount. The Sales Statement of Petrol and Oils gives the quantity received of each at the different branches. From these statements, the bin-card is prepared.

Control is exercised in a number of ways. The usual procedure is to appoint checking inspectors of whom there are 18. These have to submit their report and have to see whether the entries made by the conductor in the ticket-card and whether the actual cash on hand is of the same amount as required by the data furnished. Besides these checking Inspectors, there are, what are called, C. I. Ds. who conduct surprise inspections. Automatic time-recorders placed at each branch record the time of

Road-Rail Transport

arrival and departure so that there is no scope for loitering or for being unpunctual. The machine speaks, and they have to be on time. Thus, in every way, a healthy check is placed on its working, and the service provided is efficient.

On certain sections, the routes run parallel to the railway. The routes so affected are Coimbatore-Mettupalayam; Coimbatore-Palghat; Palghat-Kollengode; Palghat-Pollachi and Coimbatore-Erode. In spite of there being two agencies to serve these routes, the bus has good custom because of the inadequacy of the service provided by the South Indian Railway. This could be appreciated better when it is found that on all these routes the bus fare is an anna more than the railway rate. The fare charged is on the average basis of 4·5 pies per mile. The following fares on a few important routes are interesting:—

From		To	Distance. Miles.	Fare. RS. AS. PS.		
Coimbatore	..	Gobichettipalayam.	54	0	12	0
Coimbatore	..	Palghat ..	30	0	6	0
Coimbatore	..	Palladam ..	28	0	9	0
Coimbatore	..	Dharapuram ..	50	1	1	0
Tiruppur	..	Dharapuram ..	30	0	12	0
Dharapuram	..	Erode ..	..	1	2	0
Trichur	..	Kolingamparai ..	54	0	13	0
Pollachi	..	Palghat ..	30	0	10	0
Coimbatore	..	Udamalpet ..	53	0	13	0
Tiruppur	..	Mettupalayam ..	33	0	10	0

From the foregoing fare-list, we find that the basis of charging is not the same. This depends upon the nature of the competitive services and the area traversed. Coimbatore to Dharapuram, a distance of 50 miles, is charged a rate of Re. 1-1-0, whereas to Udamalpet, which is a distance greater by three miles, the rate is only 13 annas. This may be attributed to the fact that Udamalpet, is a railway station on the Pollachi-Dindigul line, whereas, Dharapuram lies in the heart of an area that is remote from any railway station, the nearest being Palni which

United Motors Service of Coimbatore

is 22 miles away. Coimbatore to Gobichettipalayam is a busy route whereon there are other services; this explains the low rate of 12 annas on a distance of 54 miles. Again, Mettupalayam to Tiruppur—a distance of 33 miles is charged 10 annas, whereas Palghat to Coimbatore which is only three miles shorter gets a reduced rate of six annas. This illustrates the great truth that in all forms of transport, competition sets the rate of chargeability. There was a general increase in these rates when the petrol tax was introduced. In the initial stages 3 pies for every ticket of the value of four annas were charged extra, 6 pies for 8 annas, nine pies for tickets costing 12 annas and an anna for all tickets of the value of a rupee and above. Now, however, a flat rate of an additional anna per every ticket is charged.

The U. M. S. serves a large part of an area that is devoid of all railway facilities so that the mails have to be taken by road. The combine handles a large bulk of the postal mails and holds contracts for eight routes. Possession of a mail contract is always indicative of affluence and efficiency so that there is great competition for this. Hence, in a number of cases the U. M. S. had to outbid its competitors to retain the contracts. The following figures for a few contracts make the position clear:—

POSTAL CONTRACT RATES.

Section.		Previous Contract.	Present Contract.
		Rs.	Rs.
Erode-Dharapuram	..	550	550
Erode-Satyamangalam	..	350	122
Tiruppur-Palladam	..	50	10
Tiruppur-Avanashi	..	50	10
Trichur-Kohinzampara	..	225	25

Road-Rail Transport

The effect of competition is seen at its best in the case of the second and last contracts.

The United Motor furnishes the example of a service that runs in co-ordination with the railways. It runs a number of co-ordinated services with the South Indian Railway which has its out-agencies at the following places:—

Name of Out-Agency.	Railway station by which served.
Dharapuram	Palni
Palladam	Tiruppur
Gobichettipalayam	Tiruppur
Valparai	Pollachi
Vannathurai	Pollachi
Satyamangalam	Coimbatore ⁸

The buses of the U. M. S. run to train-timings and thus feed the railways with traffic. In its turn, it has the advantage of having the monopoly of handling railway goods and parcels. The other advantages accruing therefrom, are through bookings on all routes—road and rail combined—and the mutual use of each other's booking offices, waiting rooms, etc. Where a through ticket is purchased on the combined service a rate concession is shown. Thus for instance, from Dindigul to Dharapuram, the through fare is 0-14-6, whereas, if the train and road portion were to be undertaken separately, there would have to be an addition of an anna; in other words the concession amounts to 6.5 per cent nearly. It is by such measures as this that co-ordination could be effected. Since it does this by providing healthy and adequate means of transport resulting in social and economic good, the U. M. S. deserves to be congratulated.

⁸ Open for parcels and goods alone.

CHAPTER XII

THE LONDON PASSENGER TRANSPORT BOARD.

IN this section we shall undertake a brief sketch of the London Passenger Transport Board which came into existence consequent on the legislation of the London Passenger Transport Act of 1933. The purpose of this measure was to devise a co-ordination of the different agencies of transport serving the London area and to bring them under unified control and management. Prior to the formation of this Board, the metropolitan area of London was served by a large number of competing services, each of which tried to take the cream off the traffic, either by operating the most paying routes during the rush hour, or by invading the routes of others. The London underground railways, the tramways and trolley-buses all began to feel the increasing competition of the road-motor so that there was the utmost need for effecting a unified transport system which would confer on the travelling public the advantages of an adequate and efficient service. The jurisdiction of this Board covers the London transport area of 1,986 square miles and a population of nearly ten millions. When the Board sprang into existence, all the competitive services were either acquired by or transferred to, the Board, the only exception being those road services whose sphere of operation over-lapped this area, and certain underground railways that were either partially or wholly owned by the main line companies. The suburban services of the latter were made to accord with the general conditions desired by the Board so as to be in harmony with the services provided by the Transport Board. This was effected by the creation of a Standing Joint Committee on which these Main Line companies were represented and by pooling the traffic receipts derived from the London area.

Road-Rail Transport

According to the provisions of the Act, the undertakings had to be bought, and for this London Transport Stocks were issued, the value of which amounted to £110,176,486. In 1938, the value of these stocks increased by over a million and three quarters. Apart from this stock, cash to the value of £3,181,718 was paid to the 169 separate concerns that came to be wholly or partly acquired by the Board. The total cost incurred in respect of these acquired or transferred undertakings was thus £113,358,204. Added to this, the Board had to borrow £4,165,000 debenture stock from the London Electric Transport Finance Corporation for capital expenditure on new works in 1935. The total capital expenditure of the Board in 1938 amounted to £131,281,061 representing an increase of nearly 20 millions over five years. The provision for renewal equals 1·85% of the capital expenditure.

The following table makes the position clear:—

Year.	Total Stock.	Capital Expenditure.	Provision for renewal.	Balance available in renewal Reserve.
1934	111,535,454	111,575,969	2,020,500	1,971,507
1935	111,535,454	113,152,136	2,526,200	4,331,340
1936	111,933,867	118,088,715	2,300,000	6,409,417
1937	111,933,867	123,777,419	2,400,000	8,302,780
1938	111,933,867	131,281,061	2,425,000	9,818,497

The working expenses on all undertakings, *i.e.*, railways, buses and coaches, trams and trolley buses, amounted to nearly 25 millions in 1938, excluding the 2½ millions set apart for renewal. The details of working expenses and receipts are stated in the appended tables.¹ The payment under the head of rates and taxes alone accounts for 8·5 per cent of gross revenue. This percentage has been almost constant during the past five years though the increase in the total amount spent was 11·1 per cent as

1 *Vide* Appendices E. 1 to E. 4.

London Passenger Transport Board

compared to the year 1934.² The index number for total working expenses was 113.5 in 1938, with 1934 as base. Out of a total expenditure of £27.35 millions, buses and coaches alone accounted for more than half, *viz.*, 14.35 millions. These expenses under each head in millions of pounds were as follows:—

WORKING EXPENSES.*

Year.	Rates & Taxes.		Electric current petrol & other fuel.		Total working expenses (excluding renewals & including staff).		
	Amount.	Per cent of gross revenue.	Amount.	Cost per car mile.	Per cent of gross revenue.	Amount.	Per cent of gross revenue.
1934	2.5 (100)	8.6	1.34 (100)	.65d	4.6	21.92 (100)	75.8
1935	2.54 (101.9)	8.3	1.34 (100)	.62	4.4	22.86 (104.3)	74.9
1936	2.67 (106.9)	8.5	1.5 (112.2)	.68	4.8	23.8 (108.6)	76.1
1937	2.77 (111.0)	8.7	1.56 (116.3)	.71	4.9	24.2 (110.4)	76.0
1938	2.77 (111)	8.5	1.71 (128.0)	.76	5.3	24.88 (113.5)	76.4
Increase in 4 years.	2.76	..	3.74	.11d	..	2.96	..
Per cent.	11.1	..	28.0	..	..	13.5	..

* London Passenger Transport Board Report for 1938-39.

There are two points that stand out prominently from these figures, *viz.*, the low fuel consumption which works out to an average of 4.8 per cent of total working expenses, exclusive of duty on petrol and fuel, and the cost per car mile. Though this cost has been increasing, due to the expansion of services, the average cost is 0.68 penny per mile which, in Indian currency, comes to about 8 pies per mile. In our calculation made in

2 *Vide* Appendix E. 1 for Detailed Figures.

Road-Rail Transport

the chapter on working costs, we have observed that in road motor transport the cost of petrol alone amounts to roughly 0.1-3 annas per mile, and lubricants to about another 2 pies per mile. The Rates and Taxes consisting of license and vehicle duty, licence fees, duty on petrol and other fuel (including income tax) account for 8.5 per cent of gross revenue on this system. The Mitchell-Kirkness Report has appraised the tax element in total working expenses at 16%. The figure just referred to, viz., 8.5%, relates to gross revenue and cannot serve as a basis of comparison. But this could be reduced to a percentage basis of working expenses in which case we arrive at the figure 11.2 as the share of taxes. Needless to say, even this figure cannot be taken as such because it includes all agencies of transport and not road motor vehicles alone.

Separate figures for buses and coaches are obtainable with regard to receipts and number of journeys. The total number of journeys originating on the Board's system was 2,167,309,552 of which the share of buses alone was 2,165,176,787. The total receipt from both was £16,236,651 out of a total of £42,120,179 for the whole system. The net traffic receipts of the whole system, deducting all charges and an appropriation of 2.3 millions in respect of income-tax, amounted to £5,265,034.

The following statistics are interesting:

Year.	Board's Receipts (millions) £	Average receipt per passenger journey.	Car mile per head of population	Rides per head of population
1934	3396.0	2.305	54.9	432
1935	3582.3	2.308	56.3	437
1936	3647.9	2.312	57.1	440
1937	3636.4	2.347	56.1	436
1938	3723.7	2.341	57.9	441

(The figures for 1937 are slightly less than those of the previous year due to the Central Bus Strike in May, 1937.)

London Transport Board

This Board, it has been pointed out, was the sequel to the passing of the Road Traffic Act of 1933 which effected a control of all services instead of being run haphazardly on individualistic lines. The need for all forms of control is essential in the motor transport industry, especially so in the case of Metropolitan transport. As long as there is no unification of services under a single supreme control, the public cannot expect that service which is its right. Mr. Brunner institutes a fanciful simile which might be quoted to bring out the full force of the analogy.³

“ The provision of traffic facilities in the London area, and the same applies to any large town, should be treated as a single problem, since this is the only way in which it is possible to deal efficiently with the transport of passengers and regulate the expansion of the urban area. The latter tends naturally to grow in a star shape, the spikes of population being along the railway lines, a thoroughly undesirable shape for a city in an overcrowded island since it involves waste of the agricultural land lying between the spikes of population and an unnecessary expenditure of time on travel for the residents in the outer suburbs. It would be better if the suburbs radiated an equal distance from the centre in all directions instead of extending twice as far out along the existing railway lines as they do where there are no lines.”

Recognising the need for unification, this Board has been set up to deal with the daily flow of passenger traffic in the London area. The power of the Board to operate services is according to the area in which the service is run. The special area within which the Board has full rights of operation consists of 1500 miles on the basis of a virtual monopoly. Outside the London Passenger Transport Area, the Board can encroach upon the

3 *Vide* “The Problem of Motor Transport”, p. 81.

Road-Rail Transport

territories of the adjoining counties up to usually half a mile so as to reach a convenient destination. So too, other concerns that work outside this area are allowed ingress up to half a mile for like purposes. Even here, there is no perfect monopoly since private carriers are not prevented from operating within this area. These apart, the private Taxi-cabs and the railway services of the four amalgamated services are allowed to operate within the area. As pointed out earlier, for effecting a co-ordination between the Board's system and these amalgamated companies in such matters as through booking of traffic and inter-changeability of tickets, a joint Committee is set up to decide the basis on which the receipts are to be pooled together.

It would be interesting to note that, for those portions lying outside of the Board's area, the Board has to apply for a licence to operate thereon just as much as any other private operator. The application has to be made to the Metropolitan Commissioners who would, nevertheless, give the Board preferential treatment so as to allow them a free hand in the co-ordination of services.

The London Passenger Transport Board is constituted of a Chairman and six members whose terms of office vary from three to seven years. These are appointable by the Trustees who consist of the Chairman of the London County Council, a representative of the Home Counties Traffic Advisory Committee, the Chairman of the Committee of London Clearing Bankers, the President of the Law Society, and the President of the Institute of Chartered Accountants. When it comes to a question of filling up other vacancies either the Chairman or a nominated member of the Board is co-opted. All the members are expected to be experts having long and active experience in industry, finance and transportation. A further provision is that at least two members of the Board should have had

London Transport Board

at least six years of administrative experience in the Local Government of the area. Their tenure of office is made conditional on good behaviour and ability to undertake the concurrent responsibilities of membership. It will be evident, therefore, that the Board is representative of all shades of opinion, and being constituted of experienced men who have had long and intimate knowledge of the area served, efficiency is vouchsafed. The Standing Joint Committee with the Railways is constituted of eight members, four of whom are representatives of the Board, and of the rest, each one is drafted from each of the four amalgamated Railway concerns, so that there is a balance in the interests involved. Lastly, the Rates and Fares Tribunal is the final authority to adjudicate in all rate disputes.

Thus the primary duty of the London Passenger Transport Board is to provide an efficient and integrated passenger transport system in London. The Road Traffic Act of 1930 which was first introduced, had to be later supplemented by the Act of 1933, as it could not entirely weed out the competition. The 1930 Act did bring about a considerable reduction in the number of vehicles and operators serving the London Area. The greatest reduction had been in the number of individual operators owning single vehicles. The number of single-vehicle operators in 1931 was 2,778; in 1933 the number was reduced to 2,580, thus showing a fall by 198. Taking the figures of all classes, there were 6,386 owners, operating 41,679 vehicles in 1931. In 1933 the corresponding figures were 5,824 and 39,541 respectively, thus indicating a reduction of 562 owners and 1,538 vehicles. In other words, the corresponding falls have been 8.8 and 3.7 per cent respectively. Another tendency which partly accounts for a fall in the number of road operators, was the increasing tendency for the small operators to get merged in the larger ones,

Road-Rail Transport

consequent on the stringency of regulations enforced. As Chester says, "The licensing system has eliminated that fierce competition which before 1931 frequently resulted in either amalgamation or bankruptcy."

The position has been ably summed up by Mr. Chester as follows:—

"The direct effects of the Road Traffic Act (1930) have probably been of a negative rather than of a positive character. The licensing system has made it extremely difficult for new concerns to enter the industry; as a consequence, any absorption or bankruptcy almost always represents a net decline in the number of operators. There have been a few entrants (mainly operating contract carriages) but certainly not as many as there would have been without the licensing system. The direct effects of the Act may have encouraged amalgamation, but it has probably not done so on the whole. One feature of the licensing system which has placed the small operator under some handicap has been the legal formalities involved in obtaining a licence. On the whole, however, the small operator, especially where he operates regular services, has gained by the Road Traffic Act. It has given him a security which he did not previously possess. The large operator by virtue of his greater financial resources and his capacity to flood the route with vehicles could and did eliminate smaller operators prior to 1931. Now, if he desires to obtain a route, almost the only method is by buying out the existing operator at a price at least consistent with the value of his service." ⁴

⁴ *Public Control of Road Passenger Transport*, p. 180.

CHAPTER XIII

THE ORGANISATION OF CONTROL.

It is only within the last two decades of this century that the motor transport industry has taken great strides and has come to be recognised as the greatest single agent of transport within short distances. There was once a time when the motor bus was not thought of as a serious rival to the railway. In fact, in schemes of suburban traffic, the tramway was considered as the most efficient, in view of the relatively low costs of transport. It was pointed out that the operating costs of a tramway are very low and that it thrives best on dense cheap traffic. Thus, in spite of the high costs of installation and track laying, the tramways came to stay. Bus transport was not considered seriously, so that we find that in Bombay in the twenties a suggestion was mooted to construct an underground tube railway to meet the exigencies of the traffic situation. As late as 1925, even so acute an observer as Professor Shah in answering the question whether we are to regard the motor bus as a separate specific agent of transport or as a mere auxiliary to tramways says " Even if it could be regarded as an equivalent to the street railway in the matter of speed which is extremely questionable in view of the necessarily lower speed at which street traffic would be allowed to work, not to mention the possibility of traffic blocks which do not affect underground railways at all—the bus cannot possibly be regarded as a good rival to the street railway particularly the underground and elevated railways which can carry per mile a train a far larger load than the bus." ¹ The rapid growth of this means of transport throughout India gives the lie to this statement and testifies to the dominating influence of motor transportation.

1 Constitution, Function and Finance of Indian Municipalities by K. T. Shah, p. 278.

Road-Rail Transport

Today, especially in the Madras Presidency, motor transport has been regulated to an extraordinary degree, and the latest Madras Motor Vehicles Regulations that come into force from 1st April, 1940 lay the coping stone to the edifice of organisational control. Nevertheless, it must be admitted that a decade ago, and more recently too, motor transport was highly unregulated and chaotic. There were no conditions to be conformed to, no restrictions as to the routes to be operated, or the number of hours to be worked. Being in its chrysalid stage, no serious attention was paid by the authorities to devise ways and means of control. Consequently, this atmosphere of *laissez-faire* was most beneficial to its rapid development as the figures for the imports of omnibuses, vans etc. show. In 1927 the imports amounted to 8,682. Two years later they nearly doubled and reached 15,306. Thereafter, there has been a very sharp fall in imports, the lowest being reached in 1932 with 2,676. In 1937, there was an improvement, and the peak figure of 1929 was almost reached.²

In the absence of control, the service rendered was extremely haphazard and irregular. Particular routes alone were taken up for operation which offered good and regular traffic. As a motor licence alone was the essential prerequisite for operating on the road, a number of services concentrated on the most paying routes, and most of these were drivers who had purchased new or second hand vehicles, either by paying cash or on the hire purchase system. Most of these people were illiterate or ill-educated persons who had no sense of public responsibility. Competition grew apace and each one tried to get the custom of the other by a variety of means which on many occasions bordered on criminality. The most common practice was racing. In the desire to run as

2 Review of the Trade of India 1938-39. *Vide* Appendix B. 3.

Organisation of Control

many trips as possible, overtaking and racing were resorted to, resulting in serious accidents to life and property. The conductors had no obligation to maintain any register of timings, the number of passengers or the receipts. Long hours were spent in canvassing custom and any passenger who happened to offer himself did so at great personal inconvenience and occasioned quarrel between the rival purveyors of traffic. There was no fixity of fares or rates to be charged and, more often it was arrived at by a long process of higgling. As the traffic expected was not heavy, most of the vehicles were of small capacity, ill built and incommodious. The chassis alone were imported and the superstructures were built locally by crude workmen. Even in the great city of Calcutta in 1939 almost all the omnibuses were looking quite Victorian. A low aesthetic sense had tended to make them seem to appear decorative, and comfort was sacrificed. In the State of Travancore where the motor services are state-run, there is due regard paid to accommodation, but even here the seats are not as comfortable as they are in either Madras, Bombay or any other place of less importance. It hardly needs reiteration that transport is a service requiring the utmost salesmanship and that, if traffic is to be expected, due regard must be paid to the conditions that make motor transport a comfort.

Even as early as 1935, the investigators of the Gokhale Institute who undertook a survey of bus-transport in the Bombay Presidency found conditions as chaotic as ever. It must be said to the credit of Madras that by that time our transport system was fairly stabilised and we had the benefits of an adequate form of transport. Today, we might be said to have attained in a large measure the control that is normally expected of a good motor service. In other parts of India, it would appear, conditions are no better than what has been represented by the investigators.

Road-Rail Transport

In the United Provinces there is a similar lack of regulation. The views of the Gokhale investigators deserve quotation in full.

“ There is an almost entire absence of any regular time schedules for the running of even old established bus services along the roads; and in very few cases could it be presumed that a bus will complete its journey in a fixed period of time. There is usually, to begin with, a considerable amount of time spent in hunting for passengers at the stands or collecting them from their houses in the place from which the bus starts its journey. There is the preliminary uncertainty regarding the time of the start. There is an equally large element of uncertainty in the time taken to reach one's destination. Breakdowns, mentioned above, play a large part in this, but there are other factors also. All along the routes, stops are made to pick up wayside passengers—after higgling with them regarding the fare—or to set passengers down. Along the routes there are frequent stages at which the buses habitually stop and the time for which the buses will stop is indefinite and depends entirely on the inclination of the driver. Further, at such stops as are important termini or originating points of passenger traffic, there is a partial repetition of the process of hunting for passengers which took place at the starting point. Along very long routes, the delay and inconvenience to passengers is additionally intensified by their being asked to change the vehicles in which they are travelling. This may be either because the service is run by means, not of a single bus running through, but by more than one bus making return trips over part of the route, or because towards the end of the route the passengers left in individual buses are so small that the complements in a number of them are put together in only one bus which completes the journey. When all these factors are

considered together, it will be realised how great is their influence on the timings collectively. Obviously, along the more important routes with a large volume of traffic, the uncertainty and the delay may not be very considerable, but along the less frequented routes, especially if a change of buses is involved, the possibility and extent of delays is so enormous as to militate seriously against the development of passenger traffic by buses.”³

The foregoing quotation has been advisedly long, because it is an authoritative statement of the conditions of motor transport in 1935. Incidentally, it is also an effective summary of the position as it was once prevalent in this Presidency *i.e.*, Madras Presidency. Of course, the fact that that survey relates to a period five years back should be considered, so that a comparison with present conditions prevalent here would be unjust. Nevertheless, it is acknowledged on all hands that Madras has led the way in Motor Bus Transport, and now it does so in the matter of its control.

Motor transport is a public utility service and has to be regulated on lines akin to such services. Unfortunately, during the era of competition when the roads competed with the railways and there was acute internal competition between the rival bus undertakings, motor transport came to be viewed with grave disfavour. Part of the blame must be foisted on the licensing authorities which allowed the road undertakings to operate on roads parallel to the railways. The Mitchell-Kirkness Committee on Road and Rail transport found that, on the whole, nearly 22 per cent of all metalled roads in British India, excluding Burma, run parallel to the railways and that 48 per cent of the railways have metalled roads parallel with them. The North West Frontier Province heads the list with 94

³ A survey of Motor Bus Transportation by Gadgil and Gogate, pp. 53 and 54.

Road-Rail Transport

per cent; Central Provinces comes second with 73 and Madras, Bombay and the United Provinces each has 60 per cent.⁴ As a consequence, the highway operators were able to take the cream off passenger traffic. This competition is keenest on the metre gauge and branch lines which, by their very nature, serve an area that has to depend wholly on the roads for their transport facilities. The whole crux of the issue is this; the cost of operating a full train that normally can expect only a light traffic is so high as to prevent frequent service. A quick service is only possible where the load factor is heavy and the trains run to capacity. The receipts derived thereunder would not justify the running of a greater number of trains. In the absence of this, an infrequent service is inevitable. The modern trend is to run rail cars on such sections the receipts from which would be in keeping with the lower costs of operation. Nevertheless, even a railcar, though economic, cannot have the flexibility of a road motor which has the advantage of taking on and setting down the passenger right at the very places he chooses. Thus, the automobile is now considered not only as a vehicle of pleasure, but also of business or traffic, furnishing a very cheap and convenient means of transportation.

With an increase in this mode of transport, the need for control has arisen. Firstly, the highway operators, in virtue of the fact that they utilise the public roads, should contribute towards their maintenance and upkeep. The highway is public property and anyone is entitled to its use provided he pays back a fee or a tax that is commensurate with the use he puts it to. In exercising control over transport services, the principles applicable to public utilities should form the basis of taxation. It will be interesting here to notice that taxation of public utilities is strictly a product of this century, resulting

4 The Mitchell-Kirkness Report, p. 6.

from their rapid development. The earliest policy was not one of taxation but of subsidisation. In the early days, when the means of communication consisted entirely of turnpikes, roads and canals, it was thought that these should be considered as public works essential to the economic development of the country. As such, they were financed out of the public revenues; and loans were issued and free gifts of land were made for their extension. But when the length of these grew by leaps and bounds, it was not found possible for the Governments to adopt this policy, since it would have led to their impoverishment. The protection and preservation of the highways is one of the cardinal duties of a public body, and it lies within the power of any state either to allow or to withhold permission to operate on the roads. Using the language of jurisprudence, no one can have the "right" to make use of the road for transport operation; it is a "privilege"; and, as privilege is most likely to degenerate into misuse, some sort of check has to be exercised. This can be done by a variety of ways: taxing vehicles, making it obligatory on the part of the transport-carriers to take out licences for their vehicles and permits for operating on the highway; placing restrictions on the dimensions of the vehicles and prescribing the maximum weight—due consideration being paid to the type of tyres used. The basis of taxation, however, varies with every province so as to suit the local conditions prevalent there. It does not need much thinking to find an explanation for this. In a backward province like Sind, which is not well served by railways and has to depend entirely upon the road, it would be the height of folly to levy so high a tax as to force the vehicles off the road. Contrariwise, in a thickly populated rich province, rich in natural resources and in communications, a high rate would be justified. This explains why Madras is the one province wherein the rate

Road-Rail Transport

of taxation is the highest in India. This is true not only in the case of provinces, but also as between different districts in the same province. Thus, in Coimbatore the rate of taxation is higher than what it is in South Arcot. Taxation may be either according to weight, as in the case of freight-transport vehicles, according to route or according to the seating capacity. The last is the generally accepted principle for taxing motor buses plying for passenger traffic. The present basis of taxation of passenger vehicles is Rs. 80 for a vehicle fitted with pneumatic tyres and having a carrying capacity of five. For every additional passenger, the maximum is Rs. 20. With regard to goods vehicles, the maximum rates vary from Rs. 50 in the case of lorries not exceeding 30 cwt. to Rs. 350 for vehicles weighing over 180 cwt., when laden. The new Act of 1938, which will be discussed in detail later, marks an important stage in the control of motor transport in this Presidency. It has brought uniformity into the tax system by laying down weight and seating capacity as the basis of taxation. The principle of route licensing which was in vogue in districts like South Arcot, Tanjore and Trichinopoly has been done away with, and dual taxation by the Province and District is abolished by levying a single provincial tax. More than anything else, it has decreed the abolition of all tolls and licence fees levied by local authorities in this Presidency.

Principles of Control. An important means of regulation is through direct control. Such control has been a long felt necessity. The chaotic condition of road services has just been referred to. An admission of this is no denial of the essential utility of road transport services. In fact, this is no peculiar stigma in the case of road operators only, but is the *sine quo non* of any unregulated service—public utility or otherwise. In an atmosphere of *laissez-faire, ceteris paribus*, the effect of competition would

always be in one way—downwards. The absence of control necessarily leads to the augmentation of the competing agents and to a reduction in fares. In transport, as in currency, the essential validity of Gresham's Law is inescapable. The disorganised competitor who is prepared to cut his rates so fine as to drive off his competitors, subsequently thrives on the wreck of these. The railway block rates are an example, and the famous instance of the crushing of the Broach steamer service by the Bombay Baroda and Central India Railway readily comes to one's mind. Therefore, for a healthy system of transport services, what is of the greatest importance is efficient control. The guiding principles in all measures of control are:—Service, Safety and Protection of competing services.

The first essential is public service. The needs of the public have first to be attended to. The State is responsible for the enhancement of the economic resources of the community. It has untiringly to see what it needs, and has to provide for them; if there is no private initiative it has to look to its provision by other bodies. A good transport system is always an index of well-being, and this is rendered possible only by a system of licensing. In granting a licence the authority should make itself certain that there is a demand for it. As long as there is an abundance of traffic, every increase in transport facilities is a desideratum. All other considerations should be subordinate to this. For example, in an area served by a railway, it would be misdirected policy to keep the motor vehicles off the highways, even though a specific need for additional services were found necessary. The Wedgwood Committee refer to this as “bolstering up an obsolete system of transport.” The general complaint made by the road undertakings is that they are accorded a step-motherly treatment by Government, because it has a

Road-Rail Transport

financial interest in the railways. It is no doubt true that the railways are of the greatest importance to India, which is a land of long distances. The sphere of economic operation of a road service is about fifty miles; in any case, it cannot exceed a hundred miles, though there are a few instances wherein six hundred miles are not unknown. Nevertheless, for inter-provincial transport, the railways alone are our sole agent and, as such, it should justly be in the interest of the State to look to their financial stability. What is attempted to be stressed here is that, if there be traffic offering, there is every need for allowing more vehicles to operate for the very reason that the railways are not being deprived of their erstwhile traffic, but that there has been a new accretion of it.

Next to service, safety has to be adequately safe-guarded. The highways are the common property of every citizen and every one is entitled to the privilege of using them. The grant of a privilege involves the duty of exercising control over its use. If left unchecked, the buses and other vehicles would go racing along the highways, seriously incommoding the public and constituting a grave menace to public safety. Safety can only be ensured by restrictions as to speed, weight and use, equipment of brakes, horns and other signalling devices, and by making it incumbent on the Provincial Governments to erect traffic signs at important public places. Non-observance of these fundamental "Safety first" rules should be penalised. But, probably the most important check is that of compulsory insurance of motor vehicles against third-party risks.

Another important function of the regulating authority would be to restrict the banalities of competition. It is here that the question of rival transport agents has to be considered. In granting licences, priority of operation and application have to be considered. Unnecessary services should be scrupulously eliminated, and in granting new

licences, the historical antecedents of each have to be looked into. Naturally, the services that had been operating for a longer period would stand a better chance, since length of operation itself is sufficient testimony of service. Given two transport concerns with varying periods of service, the longer one would be the better, because, unless it were operated properly, custom would not be forthcoming. Nevertheless, length of service alone cannot be taken as a blind criterion, because it sometimes does happen that a service that has successfully beaten off all its competitors by ruthlessly cutting down the rates would have a longer period of service to its credit. Regularity and efficiency should be the sovereign tests. As Chester says, the factors of regular and satisfactory running are bound up with each other. "They involve consideration, for example, of whether the applicant had run only in order to take advantage of the peak traffic or whether he had also considered the public who desired to travel at other than peak hours and whether his running had been sporadic and unreliable."⁵ In the absence of definite data, he says, the criterion should be the number of vehicle journeys in preference to that of passengers. The reason for this is not far to seek. High passenger traffic figures do not necessarily mean frequent and adequate service; contrariwise, it may be that the transport undertaking had operated only or mainly during the rush hour and thus was able to secure a full complement of passengers, while the conscientious purveyor of traffic who made service with a capital "S" his guiding principle by working during the slack hours as well, might not be as lucky as his less scrupulous confrere. Vehicle-journeys would be an effective index, since it would clearly show how often the operator had run his vehicle and thus, how far he had helped to meet the traffic needs of the public.

⁵ *Vide* Chester. *Public Control of Passenger Transport*, p. 114.

Road-Rail Transport

Competition in the provision of services is tolerable only in so far as it is in the interest of the public. Within bounds, it is quite essential, since its effect would be to provide for better service, not only in the motor transport industry as such, but also, as between rival agents of transport. The public should be left the option of choosing that mode of travel which suits it best. It might be that a particular individual dwells in a locality that is remote from a railway line; in such a case, there is no point in putting him to the painful necessity of taking only the railway at great personal inconvenience. This problem raises itself in a specially acute form in urban transport. A certain amount of latitude must perforce be left to the citizen. Of course, due consideration should be had for the traffic problem. For city transport, unified control is essential, as is sought to be achieved by the London Passenger Transport Board. Writing in 1928 about the traffic problem of London, Mr. Brunner believed that "to secure a scientific treatment of the problem of providing traffic facilities and regulating the growth of a city, there must be a common control of the policy of the various interests engaged in the provision of traffic facilities. This does not imply a common ownership or a common management. All that is required is a common control of policy."⁶

TRAFFIC CONTROL IN INDIA.

Let us now turn to the control of traffic in India. Motor Transport in India today is regulated in accordance with the rules laid under in the Motor Vehicles Act of 1939. Prior to the promulgation of this, the Motor Vehicles Act of 1914 effected statutory control of this industry. But, in view of the fact that its provisions were made to suit the conditions during the early stages of development, something better has now been necessitated.

6 The Problem of Motor Transport, C. T. Brunner, p. 81.

Organisation of Control

With the declaration of Peace in 1918 and the consequent phenomenal growth in this industry, the problem of road control with special reference to the issue of Road *vs.* Rail has been agitating the public mind. In 1925 the Jayakar Committee on Road Development made a searching enquiry into the problem of provision of road facilities. Thereafter, in 1933, the Mitchell-Kirkness Committee undertook an extensive survey of road and railway competition and suggested ways and means of effecting their coordination and development. That Committee appraised the loss to the railways resultant on road competition at near Rs. 190 lakhs and found that the United Provinces was the worst sufferer in this respect, the loss being estimated at Rs. 45 lakhs. The decrease in earnings has been mainly in the case of third class short distance traffic. On the East Indian Railway, the loss was estimated at Rs. 31·45 lakhs⁷ and Rs. 22·58 lakhs in 1929-30 and 1928-29 respectively. The basis of calculation adopted was the 1·5 per cent annual increase in third class during the period 1921-27 in the zones exceeding 50 miles. In Bengal,⁸ the East Indian Railway believed itself to be losing nearly four and a quarter lakhs of rupees. They calculated it this way. There were 136 buses run on competitive routes with the railway with an average seating capacity of 18·8. The average mileage of a bus trip was placed at 14·5, and each bus was supposed to operate two trips per day at an average charge of 3 pies per passenger mile. Multiplying these averages, the figure of four and a quarter lakhs was arrived at. The South Indian Railway's computation of their loss was Rs. 13·5 lakhs.⁹ It must be noted here that all these administrations were able to

7 Mitchell-Kirkness Committee Report of the U. P., p. 11.

8 *Ibid.* Bengal Report, p. 9.

9 Madras Report: *Vide* Mitchell-Kirkness Committee Report, p. 13.

Road-Rail Transport

arrive at rough calculations based on their actual receipts from distances exceeding 50 miles which was supposed to be the extent of the zone of road-rail competition.

Indian Motor Vehicles Act, 1939. Hot upon the heels of this Committee, the Road-Rail Conference of 1933 examined this question, and the Wedgwood Committee added its suggestions in 1937. The views expressed by all these bodies were duly incorporated in the new Act of 1939, the main provisions of which will now be investigated into. Section 3 of the Act provides for the licensing of all drivers and motor vehicles: "No person shall drive a motor vehicle in any public place unless he holds an effective licence issued to himself, authorising himself to drive the vehicle; and no person shall so drive a motor vehicle as a paid employee or shall so drive a public service vehicle unless his licence specifically entitles him so to do."¹⁰ Section 5 prohibits any owner or person in charge of a motor to permit any person who does not possess a licence to drive. The minimum age for the possession of a licence has been fixed at 18. Whether an employer is liable under section 5 of this Act for injuries occasioned by his employee would depend upon the particular facts of the case. The issue involves the question whether the employee was at the time of the accident, acting within 'the scope of his employment', and no owner can be held responsible for negligence on the part of his employee when operating without his knowledge. A person to become a licensee must be declared medically fit and should be one certified as of sound and sober habits. Habitual criminals and drunkards are prohibited from being licence-holders, and power is vested in the Transport Authority to refuse to grant or to disqualify or withhold a licence when it finds sufficient grounds for so doing. "Where a person is convicted of an offence under this Act, or of an offence

10 Section 1. Motor Vehicles Act 1939.

Organisation of Control

in the commission of which a motor vehicle was used, the court by which such person is convicted may in addition to imposing any other punishment authorised by law, declare the person so convicted, to be disqualified for such period as the Court may specify, for holding any licence or for holding a licence to drive a particular class or description of vehicle.”¹¹

Every vehicle whether it be used for private or for public purposes has to be registered within the province. When, however, a vehicle that has been registered in one province is kept in another for a period exceeding a year, the vehicle will have to be registered in that province. All changes of address and of places of business will have to be notified to the registering authority. Every vehicle to be registered must pass the licensing authority as fit to operate on the road. This ‘Certificate of Fitness’ specifies the date on which the vehicle has to be tested again when the life of the licence expires. The advantage of such a system of certification would seem to lie in the fact that, by not making it obligatory on all vehicles to report on a particular date, ease of routine work would be vouched for and no disorganisation of transport services would be wrought. Possession of a ‘Certificate of Fitness’ alone would ensure the grant of a permit to operate on the roads. The authority that issues the permit is the regional or provincial authority, and for this purpose, public vehicles are divided into four classes, namely, (1) Stage Carriages; this is, Motor Vehicles carrying passengers on regular services from point to point; (2) Contract carriers; that is, vehicles specially chartered or used for specific purposes; (3) Private Carriers or goods vehicles belonging to private trading companies or individuals, and not for hire purposes; and (4) Public Carriers of goods; *i.e.*, lorries and motor-trucks avowedly

11 *Vide* Section 5 of the Motor Vehicles Act, 1939.

Road-Rail Transport

used for the carriage of public goods, vehicles belonging to the Central or a Provincial Government, the Police Département, Fire Brigade, Educational Institution or any person acting under contract with a local authority, and used solely for road cleansing, road watering or conservancy purposes.

Under section 43 of Chapter IV of the Act, any Provincial Government is entitled to fix maximum and minimum fares and to "prohibit or restrict throughout the province or in any area or any route within the province" the carriage of long distance or special classes of goods either by public or private carriers, if it considers such control justifiable. The decision of the Provincial Government may be born out of a desire to co-ordinate services and to reduce the mal-effects of competition or to prevent the undue deterioration of roads due to heavy traffic. It is this section that would empower the governments concerned to put a healthy check on road competition with the railways. This could be done by either ordering vehicles off the routes or by reserving them for the road operation of the railway services. The English Act of 1921 amalgamated the 119 railways of Great Britain into 4 main groups, namely, the Southern, the Western, the North-Western, Midland and West Scottish, and the North-Eastern, Eastern and Eastern Scottish groups, but it was not till 1928 that the railway companies were allowed to operate road undertakings. Similar powers are allowed to Indian Railways by virtue of Section 51-A of the Indian Railways Act.

For the purpose of regulating traffic, each province will constitute a provincial transport authority which will act as a transport tribunal and hear and adjudge all disputes that come up to it for settlement. Apart from the provincial board, there is provision for the constitution of a regional board. "A Regional Transport Authority

Organisation of Control

shall, in deciding whether to grant or refuse a contract carriage permit, have regard to the extent to which additional contract carriages may be necessary or desirable in the public interest; and shall also take into consideration any representations which may then be made or which may previously have been made by persons already holding contract carriage permits in the region or by any local authority or police authority in the region to the effect that the number of contract carriages for which permits have already been granted is sufficient for, or in excess of, the needs of the region or any area within the region.”¹² Powers similar to those of the Provincial Authority in the matter of control of rates and fares and withholding of permits is vested in the Regional Boards as well.

Chapter V of this Act refers to the construction, maintenance and equipment of motor vehicles, and Chapter VI pertains to the control of traffic. Section 71 allows the Transport Authority concerned to specify the speed limits, and section 72 empowers it to determine the weight to be allowed. Normally, unless otherwise stated, every motor vehicle will have to be fitted with pneumatic tyres. The provincial Government is authorised to weigh any vehicle if it is suspected that the rules regarding the weight conditions have been infringed. Other sections relate to the duties of drivers and such other cognate matters. Section VII refers to motor vehicles temporarily leaving or visiting British India.

Compulsory Insurance. One of the most important provisions of the new Act refers to third party insurance. The need for inclusion of this can hardly be overstated. With the increasing growth of population and business, the need for quicker and varied forms of transport has been

¹² Motor Vehicles Act 1939, Section 50.

Road-Rail Transport

felt. To meet this, there has been an increase in the number of motor vehicles. The inevitable concomitant of this is congestion and high accident figures. Especially in metropolitan transport, the dangers arising from street accidents has become so great that almost every civilised country that merits any consideration, has introduced compulsory insurance against third party. The need for this in India has been greater still. Accident figures for India are the highest in the world. There were 35 accidents to every 10,000 of the population in 1935 in the city of Madras itself. In the Bombay Presidency it was 82.1 per 10,000 and for the whole Presidency of Madras the figure was 109.6 per 10,000. A large percentage of these accidents, it has been found, is due to commercial vehicles, and the chief cause of this is rash and negligent driving. For example, in 1935 public vehicles were responsible for 88 per cent of fatal accidents and for 75 per cent of the total number of accidents. Out of the 523 accidents in which public vehicles were concerned, 105 were due to rash driving. Comment is superfluous. It shows that some extraneous check must be brought to bear upon motor drivers so as to make them responsible for their acts of negligence. High accident figures need not necessarily be a token of incompetency in driving. On the other hand, the general consensus of opinion seems to be that, as a rule, the motor driver is a fairly efficient person. The Punjab Government expressed its view as follows:—"Among the owners of public motor vehicles, the standard of competence is fairly high, so far as ability to control the vehicle is concerned, but there is much ignorance regarding the refinements of driving and road manners, and a good deal of carelessness." 13

The only method to keep down the accidents figures to a low level, is by implementing compulsory legislation.

13 Report of the Motor Vehicles Insurance Committee, p. 17.

making it obligatory on the part of road-users to hold themselves responsible for their negligence. It must also be confessed that part of the blame should be attributed to the pedestrians and antiquated means of transport, like the bullock cart and the hackney. There is an unfortunate lack of road sense, which is particularly great in the rural areas where people are blissfully ignorant of the rules of the road. Therefore, mere compulsory insurance by itself is no '*aqua regia*' of this evil. The instilling of the road sense into the public and the provision of safety-first devices would have to be proceeded with concurrently.

The present Act of 1939 making third party insurance compulsory is based on the recommendations of the Motor Vehicles Insurance Committee which was appointed in 1936 under the chairmanship of Mr. N. J. Roughton to investigate into this problem. The Committee canvassed provincial opinion in the matter and found that some of the Governments were against this mode of compulsory insurance against third-party risks. The fear expressed was that, by doing so, the Insurance Companies transacting this business—and these were mainly foreign concerns—would be getting large sums of money in the shape of premia. Since a large part of it went to foreign companies, it represented, they said, a loss of national wealth. The second criticism levelled was that such insurance by itself would not keep down accident figures as long as the condition of the roads is bad and the people lacked a road sense. More than anything else, the Provincial bodies felt sceptical about the possibility of the villagers standing to gain by this, since it involved legal procedure. The Insurance Committee, however, found that these fears were ill-founded and suggested that all motor vehicles including motor cycles should be insured so as to cover third-party risks.

Road-Rail Transport

The Motor Vehicles Act 1939, makes it compulsory on all motorists to take out an insurance policy to cover risks against third party provided that a policy shall not "be required to cover (1) liability in respect of death, arising out of and in the course of his employment, of the employee, of a person insured by the policy or in respect of bodily injury sustained by such an employee arising out of, and in the course of, his employment, or (2) except where the vehicle is a vehicle in which passengers are carried for hire or reward or by reason, or in pursuance of a contract of employment, to cover liability in respect of death or of bodily injury to persons being carried in, or upon entering or mounting or alighting from the vehicle at the time of the event of which a claim arises, or (3) to cover any contractual liability." 14

The Motor Vehicles Insurance Committee of 1936-37 recommended the following amounts to cover liabilities arising from these accidents. For private carriers, it was unlimited. In the case of goods lorries, the amount was fixed at 30,000 rupees. In the case of passenger buses, there were two kinds of risks to be insured against *viz.*, second party or fare paying passengers and third party. For third party risk, the sum insurable was set at Rs. 30,000 and in addition to this, Rs. 3,000 per seat. In the case of other hired vehicles, while the sum to cover third party risks was the same, the amount to be insured per seat was made Rs. 5,000.

The new Act has provided for a scheme of co-operative insurance. Under section 108, a Provincial Government may allow any co-operative society of public service, provided it is duly registered and is permitted by the Registrar of Co-operative Societies, to transact business as an insurer. The conditions of grant of such permission were that the Society should maintain a sum not less than

14 Motor Vehicles Act 1939—Section 108.

Rs. 25,000 when the number of vehicles owned did not exceed 50, and ' *pro rata* ' for every additional vehicle in the possession of the members. This fund will have to be placed in the custody of the Provincial Government and will not be made available for meeting claims except in the event of the society being wound up.¹⁵

In making their recommendations as to the amount insurable, the Motor Vehicles Insurance Committee of 1936 appraised the cost of insurance as follows. For goods lorries insuring up to Rs. 30,000, the expected cost was from ninety to a hundred and twenty rupees. For buses, the cost of covering third party risk would be Rs. 90—Rs. 120 per annum in addition to Rs. 4 per seat to cover second party insurance. With regard to other vehicles, the costs under the corresponding heads were computed at Rs. 80—Rs. 100 and Rs. 5 per seat respectively.

Needless to say, the premium would depend upon the nature of the risk; the type of vehicles, the area in which the vehicle is to ply; and the conditions of carriage would be relevant in the determination of the risks to be undertaken. The Committee quote the opinion of the Calcutta Accident Assurance Association: " On the assumption that under the new legislation effective control will be exercised in relation to overcrowding of vehicles, my committee would be willing to suggest to the Insurers whom they represent, a rate of Rs. 3 per passenger for cover, limited to Rs. 1,500 per passenger without any limit per accident; for a limit of Rs. 3,000 the rate would be Rs. 4 per passenger. This premium would be charged on a maximum carrying capacity of the vehicle and, if this were to include standing passengers, would be calculated on the total number of seats plus the number of standing passengers. My Committee wish to make it clear that their suggestions are based on the understanding that the

¹⁵ Motor Vehicles Act, 1939—Section 108.

Road-Rail Transport

liability of insurers per accident will, in all cases, be limited to the maximum per passenger multiplied by the maximum carrying capacity of the vehicle.”¹⁶

The Act prohibits any settlement being made by an insurer regarding any claim which might be made by a third party unless such party is a party to the settlement. In the event of the insolvency of any person insured, that would in no way affect the liability of the insurer or the claims made by the third parties. The liability of an insured person for any accident in which he is concerned would continue even after his death, until a settlement of the claim is made. To quote the relevant section: “If the death of a person in whose favour a certificate of insurance or cover note had been issued, if it occurs after the happening of an event which has given rise to a claim under the provisions of this Chapter, shall not be a bar to the survival of any cause of action arising out of the said event against his estate or against the insurer.”

The upper limit of the sums insurable under the new rules has been fixed. In the case of a vehicle in which passengers are carried for hire or in pursuance of a contract, in respect of persons other than passengers carried for hire or reward, a sum of Rs. 20,000 is to be paid, and in respect of passengers a limit of Rs. 20,000 in all, and four thousand in the case of an individual passenger when the vehicle is entitled to carry six passengers, excluding the driver, and Rs. 2,000 when the vehicle is registered to carry more than six, driver excluding. Where the vehicle belongs to some other class, the amount of liability incurred has to be paid for.¹⁷ For lorries and other freight carrying vehicles, the limit is set at Rs. 20,000. Comparing these figures actually fixed, with those recommended by the Committee, it will be

¹⁶ Motor Vehicles Insurance Committee, p. 37.

¹⁷ Section 94 Indian Motor Vehicles Act 1939,

found there has been considerable reduction in the maxima. That Committee had suggested Rs. 30,000; but the present upper limit is Rs. 20,000—*i.e.*, a reduction of $33\frac{1}{3}$ per cent. As regards the insurance in respect of individual passengers, a new distinction has been made on the basis of capacity; and taking into consideration the fact that passenger vehicles of large capacity would find it very difficult to pay such high premia, the limit per passenger has been set at Rs. 2,000 for vehicles with a seating capacity exceeding six, *i.e.* exclusive of the driver.

Compulsion is sought to be enforced by prohibiting any person to use, except as a passenger or allow any person to use, a motor vehicle which does not possess an insurance policy complying with the regulations. Thus, no vehicle would be registered or permitted to operate on the public road by the Licensing Authority unless it is in possession of a certificate testifying to its being insured against third party risk. This certificate will have to be prominently displayed so as to allow of ready inspection. When the policy has either lapsed or ceased, the certificate will have to be automatically delivered up to the Authority that issues it. It would, therefore, be a violation of this law if any of these rules are contravened. But, if a person who is a paid employee uses a vehicle in ignorance of its not possessing a regulation certificate of insurance, he will not be held responsible in the event of his ignorance being proved.

The Select Committee that went into consideration of the Bill did not find itself in favour of the suggestion permitting a deposit to be made in lieu of taking out an insurance policy. Under the English Act of 1933, which is the parent of our piece of legislation, as also under the earlier Road Traffic Act of 1930, such a procedure is permissible. The latter makes the deposit of a sum of £15,000 sufficient to exempt a person from taking an

Road-Rail Transport

insurance policy. The deposit would have to be made with the Accountant-General, and this would be used to meet the claims preferred by aggrieved parties. The sum of a lakh of rupees was suggested by the Insurance Committee of 1936 to suit Indian conditions. The Select Committee vetoed the suggestion, because it would not be feasible in any but the largest motor associations and the Railways to make such a large deposit. As for the Railways, the Committee rightly thought that their financial status was itself sufficient guarantee. Nor did they consider the question of the State being compelled to insure its own vehicles. The reason for this is obvious, for, that would involve the curious procedure of the Government having to adjudicate against itself for claims of compensation.

These, briefly, are the main provisions of the new Act that will shortly be law. It is admittedly a very healthy piece of legislation and is bound to be a great influence in the control of road-motor vehicles. By making it compulsory for any person desirous of running a motor vehicle to insure heavily against the possible dangers of the road, a healthy fear is instilled into his breast, making for sobriety and care. He can no longer afford to tear along the road at break-neck speed in the knowledge that even if something untoward were to happen, he could, at the very worst, make a compromise by making a small compensation. By making the insurer liable for action in the event of the insured turning insolvent, it exercises a check on the grant of a policy on all and sundry as the Company will go into the antecedents of the person concerned, to assess his financial worth. Lastly, even death will not be a bar to the continuance of proceedings against a deceased person insured for damages. Thus, at every point, a check is exercised, and it is this knowledge that ensures healthy and controlled operation here as in all other forms of human behaviour.

CHAPTER XIV

TRAFFIC CONTROL IN MADRAS.

THE Madras Motor Vehicles Regulations of 1940 are a close copy of the Imperial Act of 1939 and represent the latest rules pertaining to the control of motor traffic in this Presidency. The Madras Presidency has the longest length of metalled roads in the whole of India. In 1937, we had 19,719 miles of these, representing an average length of 13.87 miles per every hundred square miles of area. Putting it the other way, the area per mile of road or railway was 7.21 square miles. Besides these, we had 3,372 miles of unmetalled roads fit enough for motor transport, thus making an aggregate of 23,091 miles of motorable roads.¹ As a consequence of this, the scope for road transport operation is unlimited. This could be better appreciated when it is remembered that more than 50 per cent of the area of this Presidency is more than 10 miles from any railway. Next to the United Provinces, Bengal and Bihar and Orissa, in the order of precedence, Madras has the largest number of villages. In 1931 there were 51,487 as against 340 towns in 25 districts.² The inevitable result of this has been the phenomenal development in motor bus transport. In this the Coimbatore District leads, not only because it has an excellent road system, but because large areas in it have no easy access to railway facilities. There are a large number of places that lie in the heart of the agricultural centres, depending entirely on road transport. With an increase in the number of regular transport road-users, the need for control has been concomitantly felt.

The earliest Act to effect this control was the Indian Motor Vehicles Act of 1914, which was made applicable to this Province. According to the provisions of this Act,

1 Figures from Scheme of Road Development for the Madras Presidency by A. Vipani, p. 5.

2 Census of India, 1931.

Road-Rail Transport

every person had to take a licence, to drive a motor vehicle, the minimum age being fixed at 18. So too the present rule regarding registration of vehicles was made compulsory. This registration was applicable only to the Province wherein it was issued, but, if it conformed to the rules formulated by the Provincial Government, it could be made applicable to other areas as well. Apart from these two, namely licensing and registration, no other direct check was sought to be enforced except the usual rules empowering the Provincial Government to enforce due observance of public safety by limiting speed and generally prescribing the conditions under which a motor vehicle could be plied for hire in public places.

Taxation in Madras. The Act was quite elementary in its scope, and the preceding pages have amply shown how, despite its feeble control, disorganisation, inefficiency and competition grew apace. The first important measure to bring effective control was the Madras Motor Vehicles Taxation Act of 1931 which did away with all tolls and prescribed the schedule of rates for taxation. Under this Act, the quarterly tax for each type of vehicle was fixed. For motor cycles fitted with pneumatic tyres, the quarterly tax was Rs. 7-8-0. For motor vehicles plying for hire and licensed to carry not more than four passengers, the tax was Rs. 30, and in the case of vehicles licensed to carry more than 4 persons, for every person which the vehicle is so licensed to carry, the tax was levied at Rs. 7-8-0. With regard to motor vehicles intended to haul goods, the levy was on the basis of laden weight. The rates increased from Rs. 75 in the case of vehicles not exceeding 15 cwt. in unladen weight to Rs. 275 for vehicles exceeding 100 cwt. in unladen weight. In the case of a trailer not exceeding a ton in weight when unladen, the rate was Rs. 60, and when it did exceed a ton, Rs. 125.³ The two

³ Madras Motor Vehicles Taxation Act, 1931.

main points to be considered in this connection are that the Act by abolishing the tolls in the whole Province lost a very valuable source of income which amounted to between Rs. 25 and 30 lakhs. The Act said, "All existing tolls are done away with and no tolls can in future be levied anywhere in the Madras Presidency on any vehicle or animal or person, except on any new road or bridge which Government may make after the date; on such works Government may levy a toll till so much of the cost of the work as they may determine is recovered. Such tolls can only be temporary and are for definite services rendered at one or two places at the most and can only be levied by Government." ⁴ By this promulgation, not only did the Provincial Government stand to lose a considerable sum of money, but it also sought to make an invidious distinction between motor and other means of transport. The bullock carts which are mainly responsible for the high depreciation of road surfaces escaped scot-free, while the motor vehicles were saddled with taxes that tended to crush the vehicles out of existence. Hardly was the ink dry when, in the Provincial Legislative Council, a resolution was moved to form a Select Committee to study the effect of these taxes on the transport industry. Such an impartial Government body as the Mitchell-Kirkness Committee found itself in agreement with the general complaint of high taxation. It might be relevant to point out here that under the Congress Ministry in Madras an amendment was effected of Section 14 of this Act which restricted the power of the Provincial Government to levy tolls under the Indian Tolls Act of 1851. Under the Act as it then was, tolls could be levied only in respect of road and bridges financed at the expense of the Provincial revenues.⁵ By this new amendment, the right to levy tolls was made

⁴ Madras Motor Vehicles Taxation Act, 1931.

⁵ *Vide* Fort St. George Gazette dated 8th March 1938.

Road-Rail Transport

enforceable even in the case of undertakings partly or wholly financed at the expense of local bodies.

The second thing that this Act of 1931 failed to check was the omnivorous appetite of the District Boards. Under this Act, the District Boards were entitled to levy licence duties in addition to the Provincial tax. This the District Boards did ruthlessly. The fees charged by these local boards on a 23 seater bus doing 100 miles a day varied from Rs. 400 per annum in Madura to Rs. 2,300 in Ganjam. The average for twenty-five districts of the Presidency was as high as Rs. 1,130. Be it remembered that all this was additional to the Provincial tax! This latter tax amounted to Rs. 690 since for every additional seat exceeding four the tax was at the rate of Rs. 7-8-0 over and above Rs. 30 chargeable for the first four. Needless to say, the combined effect of high taxation and the chilling influence of the Great Depression was to drive the motor vehicles off the road. At the commencement of the year 1931, the number of buses and lorries in Madras were 6,101 and 843 respectively. During the first quarter of 1932-33, that is barely after a twelve month, the corresponding figures sank to 1935 and 443.⁶

The payment of the Provincial tax was made compulsory on all, and it was collected as rigorously as land revenue. Certain exemptions were made, and motor vehicles solely used for the purposes of agriculture were brought under this class. Nonetheless, vehicles that were used for the transport of agricultural produce were made taxable. To effect a check on non-registration, Section 12 of the Act made it obligatory on the part of every importer of motor vehicles in this Province to submit a statement within a fortnight of the commencement of a half year, giving the unladen weight and seating capacity (in the case of buses) of every type and model of vehicle imported by him.

⁶ *Vide Madras Section*, p. 45; *Mitchell-Kirkness Report*,

The Motor Vehicles Taxation Act of 1938 marks the next milestone in the progress of the measures devised to control traffic in this Presidency. The main provisions of the previous Act were incorporated, and in view of the fact that the rules framed hereunder have been implemented in those published in the Fort St. George Gazette, any enumeration of its provisions would, it is believed, be otiose. The main effect of this new Act was to do away with the dual taxation that was prevalent and to specify the maximum quarterly tax for vehicles, both ordinary and those fitted with pneumatic tyres. In the case of passenger vehicles plying for hire, the maximum for pneumatic tyred vehicles was set at Rs. 80 per quarter. The minimum number of seats was likewise raised to five instead of four, as it was in 1931. But for vehicles having a larger seating capacity the additional tax per seat was Rs. 20 per passenger, that is, exclusive of the conductor and driver. In 1931 in computing the number of seats, the driver and conductor were included. Now they have been omitted. At the present rate of taxation the maximum rate chargeable for a 23 seater bus would be 80 plus $20 \times 16 = 400$ per quarter, or Rs. 1,600 per annum. On the old basis, the provincial tax alone would be Rs. 690 and the maximum District Board licence fee, Rs. 2,300 (in Ganjam), thus making Rs. 2,990 per annum in the shape of tax only. Leaving apart this maximum, even if the average of Rs. 1,130 for all districts were considered, the tax would be Rs. 1,820, which is obviously much higher than the Rs. 1,600 now leviable. Even this, it must be emphasised is only the maximum rate that could be levied. The actual rate to be chosen would depend upon the inherent transport conditions of the district wherein it is proposed to operate. A similar reduction has been made in the case of freight vehicles. According to the old Act of 1931, the maximum weight

Road-Rail Transport

for the first class of vehicles used solely for the purposes of trade was fixed at 15 cwt. and the quarterly tax thereon was levied at Rs. 75. The rate rose gradually with increasing weight, until for vehicles exceeding 100 cwt. the tax was Rs. 275. These rates refer to unladen weight of vehicles fitted with pneumatic tyres. The new Act put the maximum weight for the first class at 20 cwt. and reduced the tax to Rs. 50. The maximum unladen weight for any vehicle was increased from 100 to 180 cwt., and the tax on this class of vehicle was put at Rs. 350. A schedule of the rates of taxes is given in the appendix.⁷

The proceeds of the tax so collected were allocated as follows: (1) the Provincial Government was to be credited with the expenses of collecting the tax and (2) the cost of administering control of the motor vehicles in the Presidency; (3) the Provincial Government was also to be credited with a sum equal to the average annual income derived from additional fees levied by it under the Indian Motor Vehicles Act of 1914 during the three years preceding the introduction of the Act of 1938; (4) similarly each District Board and Municipal Council was to be paid an amount equal to the average annual income derived by it from the grant of licence fees for a corresponding period, namely, three years; and lastly, each local body which was levying tolls or vehicle taxes at the commencement of this Act was to be reimbursed with a sum equivalent to the average annual income from such sources during the preceding triennium.⁸ While these were the accepted bases of contributions and allocation of tax revenue, the ultimate power of determining the exact sums to be appropriated by itself or payable to the local bodies was vested in the Provincial

⁷ *Vide* Appendix B. 7.

⁸ *Vide* Section 10 (1) of the Madras Motor Vehicles Taxation Act, 1938.

Government. Sub-section 3 of Section 10 runs as follows: " If in any year the proceeds of the tax after deducting the sums referred to in sub-clause (1) to (IV) of Clause (a) of sub-section (1) fall short of the aggregate of the sums payable to local bodies of sub-clause (v) of the said clause (a) and the sum credited to the Provincial Government under the same sub-clause, such proceeds shall be distributed among the local bodies and the Provincial Government proportionately to the sums determined under clause (b) of sub-section (1) as payable to each such local body and as creditable to the Provincial Government under sub-clause (v) aforesaid and the deficit shall be made good in the same proportion in the earliest subsequent year or years in which there may be a surplus."

Along with this Act, the Madras Road Control Traffic Act was passed. Provision was made under this Act for the prescription of the conditions of road operation in this Province and for the constitution of a Central and District Transport Boards. The centralisation of all power in the hands of the Provincial Government which was the result of the passing of these acts caused much complaint in the Legislature. During the progress of the discussions on the Taxation Act, the excessive rates were condemned by Messrs. Orchard and others. Mr. Basheer Ahmad Sayeed characterised the taxes as onerous and championed the cause of the motor vehicle owners by saying that they had a right to exist as other businessmen and that such heavy taxation would only tend to cripple them and crush them out of existence. In replying to the criticisms levelled at the proposals, the Prime Minister said, " We cannot get centralised control without depriving the local bodies of some degree of power which they possessed or which we imagine they possessed. As a matter of fact, before this Bill was introduced, the power was exercised

Road-Rail Transport

by two or three different authorities, each one, not really reaping the full results of that power. The local body can pass certain rules and do certain things, the police can do certain other things as before and until all the various comets meet together we do not have the resultant done. After all, that is not real power, but it is merely a delusion. It is in order to avoid the delusion and confusion that, centralisation has been adopted as a policy.”⁹

MOTOR REGULATIONS OF 1940.

The sequel to the Act of 1938 has been the passing of the Motor Vehicles Regulations of 1940. The main effect of these rules is the constitution of a Central Transport Board and District Transport Boards for the various administrative districts. In the City and District of Madras, the Road Traffic Board is to consist of five members viz. The Commissioner of Police acting as Chairman, the Collector of Madras, the Commissioner of the Corporation, the Deputy Commissioner of Police (Traffic and Licensing) and a non-official member to be appointed by the Government. The District Transport Board will be constituted of the following members:—The District Magistrate who would be the Chairman of the Board, the President of the District Board, the District Superintendent of Police and a non-official member. In addition to these members, the Chairman of the District Transport Board could ask the Executive Engineer and the District Board Engineer to act as members in an advisory capacity.

The constitution of the Board is thus found to be complete. The Magistrates would represent the administrative and judicial side and be in a position to control best the conditions of transport. Law and Order would be maintained by the limb of the Police Department, while the non-official member would represent public opinion

⁹ *Vide* Legislative Assembly Debates.

without looking through the tinted glasses of officialdom. Since the District Boards are actively interested in the maintenance and construction of roads and would be desirous of restricting traffic that would be harmful to the roads, their representation on the Board is essential. For technical and expert opinion on the engineering aspect of road transport, the Engineers, who would have no vote but only act in an advisory capacity, are an asset. The personnel of the Board is comprehensive, but one would wish that there was one more non-official member on the Board. In the District Transport Boards, there are three official members and only one non-official so that the addition of another member will not, by any chance, upset the weight of official opinion. Since every problem has a number of facets, it is quite likely that two non-officials may be able to view a question more comprehensively than a single member. Apart from this possible improvement, it must be said that the personnel of the Board leaves little to be desired.

The Central Road Traffic Board which will be the final Tribunal in the disposal of all cases would be constituted of the following:—

1. The First Member of the Board of Revenue, who shall be its Chairman.
2. The Inspector of Municipal Councils and Local Boards.
3. The Chief Engineer to Government, Public Works Department (Roads and Buildings).
4. The Inspector-General of Police.

The Secretary to the Central Board will be an official appointed by the Government. For the District Transport Boards, the District Superintendent of Police would be the Secretary, and in the case of Madras, the Deputy Commissioner of Police (Traffic and Licensing).

Road-Rail Transport

The Regulations specify that at least one meeting per month must be conducted and that the quorum necessary must be two members, one of whom should necessarily be the Chairman of the Board. If any person were to be dissatisfied with any decision arrived at by an individual member of the Board, he has a right of appeal to the Board within a month of such decision. The final Tribunal for appeal in all cases is the Central Transport Board. It will be seen that the provisions of this act are in close imitation of the London Traffic Act of 1933. Under this Act, there were twelve licensing authorities with jurisdiction over twelve Traffic areas, and appeals from the decisions of these had to be made to the Appeal Tribunal which consisted of a Chairman and two other members appointed by the Ministry of Transport.

The method of control adopted in this Act is through licensing of drivers and conductors and registration of vehicles. The registration fee for a motor vehicle not exceeding $5\frac{1}{2}$ tons in laden weight is Rs. 16 on application and Rs. 8 on renewal. When, however, the laden weight exceeds $5\frac{1}{2}$ tons, the registration fees is Rs. 32. For this purpose vehicles have been divided into four classes *viz.*, (1) Stage Carriages, (2) Contract Carriers, (3) Private Carriers and (4) Public Carriers. According to the English Act of 1933 there were 3 classes—Public Carriers for whom 'A' licences were issued; Limited Carriers licences or 'B' licences, and Private Carriers or 'C' licences. Public carriers were those who, as in India, carried goods for hire; 'C' licences entitled holders to carry goods for their own private purposes and 'B' authorised the owner of it to haul goods, both privately and for the public. These three classes, needless to say, applied only to the road haulage business. Besides this, licences were issued for stage carriages as well. Section 295 of the Madras Act says, "If a person holds

stage carriage permits for two or more routes, the Transport Authority may, in its discretion and subject to such conditions as it thinks fit, permit him to use a vehicle in respect of which he holds a valid stage carriage permit on any of such routes, provided that the vehicle shall be used only for the provision of such transport facilities as the owner is authorised to provide in accordance with the terms of the permit which he holds.”¹⁰ The licensing as it is done here refers to the vehicle and not to the route, though the ultimate decision whether a particular route should be operated or not vests in the Transport Authority concerned. In the English Act, however, there is a special road service licence which permits the licence holder to operate on a particular route. In Madras, this is effected by a system of ‘permits’. The cost of a permit for a motor bus is Rs. 16 on application, and Rs. 8 on renewal. The conditions of grant of a permit are that the vehicle is road-worthy and kept in good repair and conforms to the specifications regarding laden, unladen and axle weight, and that the rules regarding speed limits have been complied with. The permit for a contract or a stage carriage has to be made in form ‘G’ and that for a goods vehicle in form ‘G. 1.’ Under each of these forms the following information has to be supplied:—

1. Name of registered owner.
2. Residence of registered owner.
3. Head Office of registered owner.
4. If the vehicle is the subject of a hire-purchase agreement, the name and address of the seller.
5. If the vehicle is the subject of a hiring agreement, the name and address of the person for whom it is hired.

¹⁰ Section 295. Madras Motor Vehicles Regulations, 1940.

Road-Rail Transport

6. Registered number and description of the vehicle.
7. Route, routes or area for which the permit is issued.
8. Seating capacity of the vehicle, excluding the seat of the driver and the seat of the conductor, if any.
9. Fares to be levied.
10. Personal luggage allowed free of charge for each passenger.
11. Rates of fares for excess luggage.
12. Schedule of time, if any.
13. Speed at which the vehicle may be driven.
14. Other conditions.

The information obtained from these heads is exhaustive, and the form of the permit approximates a questionnaire. All these things have got to be considered before a permit is issued. The English Road Traffic Act provides that, in addition to these, the needs of the area as a whole in relation to traffic have to be duly considered. This was provided for in Section 148 of the Madras Act of 1938. The Act specifically made it obligatory on the part of the permit-issuing authority to take into account the interests of the public as a whole and of the providers of other facilities, the extent of the need for such additional services and the advantages anticipated thereof. Other considerations should be those of the financial stability of the operator, the condition of the roads, and the operation of unremunerative services as compared with remunerative services. Thus, not only are the different types of road services sought to be controlled, but also the safeguarding of road services as compared with alternative modes of locomotion is effected. This could be done, as it has been, by the Transport Authority fixing the hours of work *i.e.*, by checking the timings of the services, exercising a check over the fares charged and by prescribing the routes to be operated, the type of goods

to be carried and similar restrictions. In England, a Fares Committee and Regional Fares Committee for the six districts have been set up. The avowed purpose of these Committees is to investigate into the legality and justice of the fares charged. The following order issued by the Minister of Transport exemplifies the method of control effected: "The number of vehicle journeys to be operated.... (i) on any one day shall not exceed three times the number of vehicle journeys required to be operated each day throughout the year and (ii) in any one direction on any one day shall not exceed two-thirds of the total number of additional vehicle journeys authorised to be operated on that day." ¹¹

For a regulated control of road motor operation, nothing is of greater importance than the perfect running of services on time and the advantageous location of terminal stations. The starting places and the termini have to be situated at centres which would be easy of access to the public. This is specially so in the case of long distance motor traffic, for the question does not seriously arise in the case of city transport because of the large number of halting places and routes run. Nevertheless, the importance of these can hardly be over-emphasised. The public must not only get the benefit of an adequate service but also of a convenient means of locomotion. The city clerk would rather take a tram that is nearer him than walk a furlong to catch a bus, even though that may be speedier. Having boarded a bus, his next concern would be to reach his destination in time. Nothing is more irritating, especially during the rush-hour, than unnecessary delays. In the case of long distance traffic this is especially acute. It is habitual with drivers to waste time at bus stops and then to make up for lost time by speeding. A healthy check on this is the device of the

11 Order No. 32 of 1934: Minister of Transport.

Road-Rail Transport

trip sheet wherein the time of arrival at each stop is entered. Besides this, information regarding the number of passengers on the bus between given points is available. These trip registers are of the utmost aid in gauging the flow of traffic and in making an analysis of traffic. It would be of the greatest service if the public bodies deputed some of its men to make a detailed study of these traffic figures so as to judge the heaviness of traffic offering. Such a study would be invaluable in effecting a co-ordination of the various services. Section 187 of the Act of 1938, makes it compulsory on the part of every driver or conductor to maintain such trip registers which should be kept open at all times for inspection by any Police Officer. In addition to this, it is provided that "the Transport Authority may by general order direct that every stage carriage shall stop at such stations on its route as the transport authority may prescribe and thereupon the conductor of every stage carriage shall correctly enter in the register in Form T. G. R. kept at each such station the particulars specified therein." ¹²

Such then, are the broad provisions of this important piece of legislative enactment regarding the rules of traffic, the forms in which applications are to be made, conditions of grant of provisional permits and licences and the mechanical upkeep and equipment of vehicles. For purposes of calculating seating capacity, a child above 3 and below 12 years of age, is to be issued a half-ticket and the counterfoils of all tickets issued have to be maintained for inspection, except in the case of the Bell-Punch Machine which would automatically record the number. Finally, all vehicles are expected to carry with them a sufficient complement of tools and an inflated tyre, ready for an emergency.

CHAPTER XV

LEGISLATION ABROAD.

GREAT BRITAIN.

No piece of legislation can be perfect. There can be no finality in the domain of further enactments; nor would that be a desirable goal, for legislative stagnation is not symptomatic of a healthy economy. Compared to what has been effected in other countries, our methods of control do not suffer much by contrast in their provisions. The London Transport Act, the main provisions of which have been faithfully copied by these Indian acts, is more comprehensive in its scope. It is the result partly of greater development and partly of the very local conditions under which they are made to operate. Early in 1905, the Royal Commission on London Traffic in Transport recommended the 'creation of a permanent authority possessed of special knowledge and experience and giving continuous attention to all questions affecting locomotion and transport in London. It found itself in favour of amalgamation of services, not only because it was cheaper to operate a few large services, but also, because of the ease of co-ordination. A few well-directed services could be made to realise the advantages accruing from unified control, and ways and means for doing this could be suggested. Nevertheless, in the absence of a specific body specially set up for effecting this, it would be too much to rely upon the sagacity of private undertakings. The Kennedy Jones Committee, which made a thorough study of the transport problem, recommended the creation of a London Traffic Authority consisting of a Chairman and two members whose only purpose was to make an untiring survey of the needs of the travelling public, the facilities available, and to suggest a comprehensive plan of improvement. Consequently, in 1924 under the London Traffic Act, the London and Home Counties Advisory Committee was constituted for this purpose.

Road-Rail Transport

The Traffic Act of 1933 is the result of a long series of enactments. This Act affects all forms of motor transport: stage carrier, contract goods-hauliers, carriers, express carriers etc. The method adopted is the same *viz.*, licensing of operation by Regional Committees set up for the purposes of regulating traffic. Besides the ordinary stage carriages, the excursion services have been licensed to operate their services outside the limits of the London area, but their fares are so controlled that, within the London Traffic area, their fares are higher than what they are on the Metropolitan services. The reason for this is obvious. If their fares over these distances were less, they would be drawing traffic that would legitimately belong to the London services and thus constitute a grave menace to them. The sovereign end in view should be the protection of the regular services against the irregular ones. To do this, the Act empowers the Area Commissioners to exercise limits on the number of vehicles to be set apart for excursions, the number of journeys they are to perform during the year, and the occasions on which they may run, as well as determine the fares chargeable. The Metropolitan Commissioner upheld in an appeal that the regular road and rail services must be maintained throughout the year, which necessitated his safeguarding their legitimate rights by imposing restrictions on the excursion services. In the case of the latter, standard condition No. 10 lays down that except for tours lasting for more than a day "the holder of the licence shall charge only day-return fares and no passenger shall be carried on the return journey other than a passenger who on the same day has travelled on the outward journey on a vehicle operated by the holder of the licence under the licence." The need for this is seen in the fact that the excursion is an irregular service, and unless the passenger is assured of a return service, much inconvenience would be caused to him.

The haulage of goods is regulated under the Road-Rail Traffic Act of 1933. Under this, there are three classes of licences *viz.*, Public Carriers' licence or 'A' licences, Limited Carriers' Licences or 'B' licences and Private Carriers' Licences or 'C' licences. The meaning of these has already been explained.¹ In 1935, on the 30th of September, the number of licences issued under each class was:—'A' licences—100,152; 'B' licences—55,558 and 'C' licences—303,886. It would thus appear that the private carriers, *i.e.*, private trading companies that ran their own vehicles for private purposes far exceeded the others. The Limited Carriers were the least. The first type of licence is valid for a period of two years, the second *i.e.* 'B' for two years and 'C' for three years. The conditions for the grant of a licence are that the vehicle is maintained in good condition and conforms to regulations regarding speed and weight. The Road Traffic Act of 1930 had fixed the maximum weight for any vehicle at 22 tons. The speed limits differ according to weight, from 30 miles for a 2½ ton light lorry to a minimum of 3 miles for heavy vehicles. This tonnage granted at the time of the issue of the primary licence came to be called the "claimed tonnage" or the tonnage allowed them under the conditions of the Act. If, however, the Carrier wished to extend his business and asked for the allowance of a larger tonnage, then the power to grant this 'discretionary tonnage' lay with the Licensing Authority. Similar provision is made in the Indian Act where the Transport Authority may or may not allow the conversion of a particular vehicle from the form under which it has been licensed to another. At the termination of the licences A and B, all 'claimed tonnage' would become 'Discretionary', because the Transport Authority was the body that had to sanction its renewal. Section 11 (2) of the Act of 1933 lays down that 'It shall be the duty of

1 *Vide* Chapter on the London Passenger Transport Board.

Road-Rail Transport

the Licensing Authority, on an application to which this section applies, to take into consideration any objections to the application which may be made by persons who are already providing facilities whether by means of road transport or any other kind of transport, for the carriage of goods for hire or reward in the district or between the places, which the applicant intends to serve, on the ground that suitable transport facilities in that District or between those places are, or, if the application were granted, would be, either generally, or in respect of any particular type of vehicle, in excess of requirements, or on the ground that any of the conditions of a licence held by the applicant has not been complied with.''.²

The result of all these regulations has been to restrict the number of new entrants. A new applicant has now, not only to satisfy the authorities in respect of the usual vehicle specifications, but also to prove convincingly that the service he offers meets a public demand and that others already in the line have failed to provide it. The onus of proof is on the prospective road operators. In *John Rhodes vs. L. M. S. Railway*, the case of the former was dismissed on the ground that the service he offered was not for "new traffic." A *prima facie* case has got to be made out that the new service to be offered is to cater to new traffic and has not been provided either by road or by rail. This was also the decision upheld in *Enston's case*² wherein the new entrant had to make out a strong case for the grant of his licence.

In addition to these, under the Road Traffic Act of 1930, there is compulsory third party insurance not only of public motor services but also of private owners. Other restrictions are similar to those in Madras *viz.*, hours of work, fitness of vehicles, regularity of service etc. Part II of the Act of 1933 refers to the Railways. Under the

² Traffic cases decided under the Road and Rail Traffic Act, edited by Maxwell & Fay, Vol. 22, p. 5.

provisions of this Act, any railway is entitled to quote a special rate to any trader subject to the sanction of the Rate Tribunal set up for this purpose, which is the Central and Regional Fares Committee. Latitude to quote rates not below 40 per cent of the standard rate without the sanction of the Tribunal is allowed to the railways.

The Motor Vehicles Insurance Act of 1933 forms the basis on which our act has been drawn up. The main principles of the scheme of insurance are similar to ours. It is an offence, subject to certain conditions, for any person to use any vehicle unless there is in respect of such user a policy of insurance covering third party risks. It must be authorised to cover claims arising from death as well as injuries. If the accident is with another vehicle, then the policy does not cover such persons not carried for hire or reward in it. Employees of the insured also are not covered by such a policy. Section 38 of the Act specifically states that "any condition in the policy or security purporting to avoid liability in the event of some specified thing being done, or omitted to be done, after the happening of the event giving rise to a claim which is required to be covered by the Act, is of no effect, but this does not prevent the insurer or giver of the security from recovering subsequently from the assured or the person to whom the security was given."³ Thus the risk arising from wrong or misinformation with regard to the grant of policy has to be borne by the Insurer on whom lies the responsibility of meeting all liabilities in respect of policies issued by him. If the Insurer finds that the information in the policy is either wrong and wanton, it is left to him to sue the assured. By so doing, the aggrieved party is assured of compensation under all circumstances. It has previously been mentioned that a security deposit with the Government would suffice.

3 Section 38. Motor Vehicles Insurance Act (England).

Road-Rail Transport

The details given in the certificate of insurance refer to the name and address of the person in whose name the policy stands, the date on which the security or policy comes into force, the conditions under which the policy is issued and such other relevant data.

It will thus be seen that the method of control adopted in Great Britain almost reaches perfection. The end sought has been to effect a co-ordination of all means of transport by apportioning to each its respective sphere of influence. As the Salter Committee states "such a comprehensive measure of agreement has necessarily been arrived at by a process of give and take, and concessions on both sides. It is expressed in a scheme of which each section is an integral and interdependent part of the whole. It must not be assumed that if one part was rejected we should remain agreed upon the remainder. Conscious therefore that the rejection of one part of our scheme might endanger the whole, we have taken special pains in each sphere of our recommendations. Such difficulties are always great but they have to be overcome when comprehensive schemes of transport development have to be framed." ⁴

UNITED STATES OF AMERICA.

In the United States of America regulation of motor transport is less strict than that of railways. That is partly because of the vast size of the Continent and the number of States that go to constitute it. Each State has its own peculiar conditions, so that no legislation can be put into a 'straight jacket' and thrust upon all. The power to make laws has thus to be delegated to the States since they alone know best their local needs. The State laws cover a wide field. As elsewhere, the public road operator has to first make out a clear case that the service he offers is non-competitive and caters to 'new

⁴ Salter Report on Road-Rail Transport, Part IV, p. 40.

traffic'. Other restrictions pertain to control of rates and fares, third party insurance, size of vehicles and speed. For example Section 3 of the Alabama Motor Carrier Act of 1927 vests power in the authority "to supervise and regulate every motor Carrier doing business in the State, to fix just, fair and reasonable rates, fares, charges, classifications, rules and regulations of each such motor carrier etc." Section 2 of the same Act runs thus: "If any motor vehicle shall be operated over any public highway of this state in such manner as to come into competition with any motor carrier operating under a certificate issued by the Commission—the Commission may order the operator to cease or desist, or may require the operator to obtain the necessary certificate."⁵ The Alabama Public Service Commission, has as complete powers over the licensing of routes, maintenance of uniformity of rates, and regard for the public need as the English Transport Authorities. A somewhat rare provision is that no service may be discontinued without the permission of the commission. The merits of such a clause are self-revealing. By making it incumbent on an operator to maintain his service without the option of withdrawing at will, it leaves the field open only for such operators as have the wherewithal and the organisational ability to serve the public for long. Mushroom concerns that could make their appearance over night, like Jack's bean-stalk would be taboo.

Third party insurance is generally enforced in the States. A few States like Massachussets have any scheme of compulsory insurance as such. In the majority of States, there are what are known as "Financial Responsibility laws" whereby after the driver of a car is involved in an accident, he must prove his financial responsibility by executing a bond or security before he

⁵ Section 3. Alabama Motor Carrier Act, 1927.

Road-Rail Transport

can drive his car again. All States, generally, make it necessary for motor users to file a surety company's bond or a policy of indemnity assurance with the authority concerned. In Texas, claims arising from under the Workman's Compensation Act have to be covered also.

Control is not necessarily exercised over all; some State laws apply only to passenger services and others to freight. The regulations are mainly police intended to guard the safety of the public. Licensing is the generally acknowledged method of control and a "Certificate of Public Convenience and Necessity" has to be obtained in the case of the Common carrier, whereas the contract carriers need only take a permit similar to the 'G' permits prevalent here.

IRELAND.

Ireland furnishes the example of a small country which, nevertheless, has advanced far in the matter of transportation control. This has been effected by two Road Transport Acts that became law in 1932 and 1933. The powers exercised under these laws are very intensive and represent almost every aspect of the problem. The earlier act was mainly meant to control passenger traffic, while the subsequent one specialised in freight traffic. The former law distinguishes between annual and occasional services and seasonal services. The controlling authority is the Ministry of Industry and Commerce which issues licences partly on the basis of public need, and the overlapping of services is avoided as far as possible. The life of the licences is one year and, while new licences are issued only subject to condition of there being special demand for it, all renewals of old licences are made only on the basis of efficient and safe operation. For this purpose, every road undertaking has to make and keep a record of its work, fare and time-tables, wages, duration of operation and accounts which must be shown to the

authorities at the time of renewal. Another peculiarity is that licences do not refer to vehicles, but are personal so that a change in ownership has to be ratified by the Minister.

The later Act which regulates freight services distinguishes between existing and proposed services, 'authorised companies' and others. The 'authorised companies' refer to railways. As in the case of passenger traffic, an applicant desirous of operating on the road should specify the nature of the goods he desires to transport and the area within which he would operate. In the matter of the grant of licences, the railways are always preferred, and actually when the need for an extension of service arises, the Minister first elicits the opinion of the railways whether they would undertake to run the service. In case they fail to do so, then only would the private applicant, belonging to the other categories referred to, be allowed to operate. Control of the conditions of operation is as rigorous as elsewhere, and check is brought to bear on the operator at every point. The 'Garda Siochana' or the Civic Guard, which corresponds to our Police Department, exercises extensive control through rigorous inspection.

Considerable preference is shown to the railways which can take under their wing any service, goods or passengers. In the case of the latter, they could do so only after 1936, that is, after the expiration of three years of the introduction of the law. Any such enterprise which is so absorbed has to furnish to the Minister, the schedule of rates of charge, which will have to receive the assent of the Minister who may, if he so chooses, call for certain changes to be made. It must be mentioned here that when such a transfer to the authorised company is made, the enterprise so affected must be compensated by them. The compensation money is determined by a

Road-Rail Transport

Committee consisting of the Chief Justice, the President of the High Court and an Official appointed by the Minister of Transport. A like compensation has to be made even in the case of the employees so displaced which would amount to a twelfth of the annual pay for every full year of service.

From this short sketch it will be obvious that Irish transport policy is along well-directed lines, the most outstanding feature being the undue weightage given to the railways. The guiding influence in this policy, obviously, is not mere control, but co-ordination as well.

OTHER COUNTRIES.

In France the decree of April 19th 1934 is the code of transport regulation. There is a Co-ordination Committee of five experts consisting of two railway representatives, two of road interests and one of such road services as have contracts with the public bodies. This Committee would have to choose by a unanimous vote an impartial arbiter failing which he would be nominated by the Minister of Public Works. The business to be transacted at the meetings of this Committee will have to be preliminarily gone through and discussed in regional committees of the interested parties. The decision of the arbiter, if it is not accepted, will have to be communicated to the Minister who would ratify it, after which it would be enforceable on the parties.

The foregoing refers to the co-ordination of transport. In the matter of control of road operation, the Frenchman has been habitually lenient. Freight transport is regulated only by the 'Code de la Route.' Passenger services are of two categories; subsidized and non-subsidized. The former alone are rigorously controlled in the matter of fitness of vehicles, tariffs, time-tables and accounts. Those belonging to the second class, had great freedom and had

only to report to the Prefect of each Department the number of vehicles and the time of operation. A number of taxes on motor transport are levied such as (1) turnover tax and luxury tax, (2) tax on imported vehicles, and (3) tax on insurance premia, besides registration and licence fees, petrol tax, etc.

Conditions in Canada are not specially suited to the development of road traffic, because of the vast extent of the country, and the limited radius of motor operation. Other factors retarding growth are high taxation and increasing competition offered by the railways and private vehicles. Control of a general nature is exercised. The rates adopted are usually determined in consultation with Provincial Governments, and third party insurance has been made compulsory. The classification of trucks is as follows: (1) Common carrier vehicles engaged in operation for hire purposes on prescribed routes, (2) Contract carriers or vehicles used in the transportation of the goods of a particular company or person under a contract and, as such, permissible to operate a plurality of routes and (3) private trucks. All vehicles to be registered must take out permits, publish time and fare tables, and subject themselves to inspection. Curiously, freight rates are not controlled, and they are more lightly taxed than passenger vehicles. It would appear that in Ontario the tax on a 90-seater bus doing 30,000 miles per year is 840 dollars whereas that on a truck doing the same mileage is as low as 215!

The South African Road Transport Board constituted in 1930 under the provisions of the Motor Carrier Transportation Act of that year, is the authority that supervises and regulates motor transport in that Dominion. The undertakings that come under it are (1) Urban services, (2) Controlled Motor Transport Services and (3) Government Railway Motor Services. These last are

Road-Rail Transport

of great help in the development of the road services. In the grant of permits the transport authority is guided by those inalienable dictates of public need, and the method of control adopted is much the same as in India.

This concludes our study of control of motor transportation. The outstanding feature of such control has been the almost universal adoption of the licensing system. In certain cases, route licensing is adopted as it was originally in the Tanjore, Trichinopoly and South Arcot Districts. In England, passenger vehicles are licensed on this principle. Moreover, it will be seen from the foregoing that goods traffic has not been regulated to the extent to which passenger transport has been, as for example in Canada. The issue of permits, today, in India, as elsewhere, is made on the principle of public need. The licensing authority first has to satisfy itself that there is public need for additional services, and that the traffic catered for is new. In doing this, the need of safeguarding the interests of the other undertakings is always kept in view, and an attempt is made to restrict the effects of competition. The various Transport Boards exercise check over the road-worthiness of the vehicles, the rates charged and the time and frequency of operation. A new feature of the Act of 1939 has been the introduction of compulsory third party insurance which is bound to have a healthy influence on road operation. The three cardinal principles adopted should be those of public need, protection of other operators and priority of service. The importance of the first principle *viz.* public need can hardly be over-emphasised. In transportation, costs play as important a part as need. In fact, the latter may be said to be even more important in certain cases. By costs, it should be understood, we refer to the cost to the passenger or freight. Thus, for example, road transport is cheaper than rail transport and this in its turn is cheaper than

air transport. Nevertheless, the airways are rapidly developing, since there is a demand for quick service inspite of its high cost. The guiding criterion is therefore need and, as modern business is highly specialised, depending upon quickness, the quickest means of transport are quite welcome, provided the service offered is safe and efficient.

In the initial determination of the need, a number of factors have to be considered, for it is transportation that makes cities. London sprang into existence not because of its commercial importance, which came later, but because at that place the Thames could be forded most easily. The first thing that has got to be done is a traffic survey. We must be able to gauge the density of traffic that would offer. This would, in its turn, depend upon the layout of the country, proximity to towns of importance, the commercial possibilities of the area served and the nature of the industries localised therein. If it is an educational centre, like a University town or a collegiate centre, then there is bound to be heavy traffic, just as the railway receipts of the South Indian Railway have swollen consequent upon the institution of Annamalai University. Again, certain places are market towns where weekly markets are held; traffic in this case is bound to be heavy, though seasonal; so too; if the town served is a pilgrim centre. But more than any thing else, the existence of rival means of transport already serving the area is a relevant factor. For all this, a traffic analysis is essential and it ought to be the business of the Transport Authority in each area to conduct a periodic survey of the traffic offering. The period chosen must be long and comprehensive, so that the average requirements may be determinable. In this, the services of the local police should be requisitioned who could be directed to take statistics of traffic passing at the traffic points. In the case of passenger traffic, the trip sheets

Road-Rail Transport

furnished and maintained by the conductors should afford an excellent criterion whereby to judge it.

We are a progressive nation. Everyday, hour by hour, there is a net addition to our wealth. Concomitant with this, there is a growing pressure of population, so that the demand for transport is bound to be constantly increasing, and to meet this, additional services will have to be provided for. The Transport Boards will thus have a hard task before them. They will have continually to feel the pulse of traffic and, when the time comes, be prepared to abide by the three principles referred to. It is only then that any co-ordination of services could be effected—co-ordination of which we are in such urgent need.

CHAPTER XVI

CONCLUSION.

WE have now come to the end of our task, and it would be well here to recapitulate the main issues involved. The first thing that strikes us is that each means of transport which, we find, is essentially complementary to the others, has advantages of its own. The sphere of influence of each is clearly discernable; both railways and motor vehicles are integral features of a well planned transport system. It would be, therefore, hard to say which one was the more important, as either of them has great scope for doing good. In the carriage of heavy goods that cannot be compactly packed and which have to move great distances the railways are our chief support. So too, for long distance-passenger traffic where comfort and speed are equally essential. On the other hand, within a comparatively small area, where there are no other adequate means of communication, the road-motor vehicle is unrivalled. Its use has been developing on an unprecedented scale, as it has an important part to play in our economy. In rural and urban services alike, they are of great use and are being increasingly used in the distributive services by such concerns as co-operative societies, milk-distributors etc. But, unfortunately, the growth of these undertakings has not been properly checked, and they have been allowed to operate on routes where they offer very keen competition to the railways. This, they have been able to do because of the low incidence of motor transport rates in comparison with railway rates. It was seen in our study of freight rates that the average incidence of the latter on prices comes to about 15 per cent. On the other hand, the motor is able to offer much cheaper rates because of the low capital costs. The vast bulk of railway rates are fixed in character, and the other difficulty is that of allocating costs to particular consignments. In the motor transport industry, however, because

Road-Rail Transport

of the low capital investment and the cost of operation, a large percentage of costs is attributable to the direct expenses of handling the traffic. Moreover, the railways are required under certain statutory regulations, to make a distinction between the commodities carried. Thus, agricultural commodities are placed in the highest class, and as the value of the traffic handled increases so too does the classification; that is, commodities with a high value are placed in lower classes. In the motor industry no such discrimination is practised. There is no General Rates Classification to stipulate the rates that should be charged for particular consignments, and, as a consequence the rates offered by a motor service are much below the railway charges. In our study of railway rates, we had occasion to observe that it costs just as much to haul a ton of wheat as it does to haul a ton of iron goods, though there might be some difference in the handling and other minor charges. Nevertheless, the actual costs of transportation are just the same, as both of them contribute in about equal measure to the total expenses incurred in running the goods train. But, because of the higher value of the latter, it is put in a lower class and charged a higher freight. No one can doubt the equity of this method of charge. What is intended to be shown is that this reduces the railways' ability to compete with the road vehicle. Truly, the position of the railway in the matter of rate-making is trying. Suppose for a moment, a railway was offered competition by a road vehicle. Then, if the railway were to raise its rates to compensate for its loss in income due to competition, its revenue would be further attenuated, since what traffic offers itself under the old rates would be deflected to the competing service. If, however, it were to lower its rate so as to meet the competition, then, the road service would get strongly entrenched in its position and the rates would obtain a character of permanency. Thus to quote Mr. Walker,

the essential unfairness' of road competition lies in the fact that the railways are constrained by law to charge more than the road operator for traffic in the General Merchandise classes and less for all other classes of goods, quite regardless of whether or not it costs the railway more than the road haulier to carry the former classes of goods and less to carry the latter.¹

It is this that explains the loss of income suffered by the Indian Railways. The extent of this loss has been very considerable. The Mitchell-Kirkness Committee estimated it at two crores; in 1937 the loss was placed at nearly Rs. 4½ crores, comprising of Rs. 3¾ crores under the head of passenger earnings and Rs. ¾ crores in respect of goods-traffic. These, however, are merely estimates, and the Wedgwood Committee authoritatively remark that in the absence of adequate statistics it is difficult to assess the actual loss. The railways themselves make 'astronomical' calculation. The usual method of calculation is to take the number of vehicles operating, their seating capacity and the mileage run. From this, basing calculations on the third class fare on the distance, the loss is estimated. Such a method of calculation can never always be exact, for the vehicles never always run to capacity. Secondly, all vehicles do not run all the days in the year, and, lastly, in certain cases, the motor buses actually feed the railways with additional traffic. There is therefore great need for the maintenance of adequate and correct statistics. As Sir Eric Geddes said in presenting his Bill for the Ministry of Transport Act, 1919, and Railways Act 1921, the confidence which should spring from such accurate and full knowledge would be invaluable. Nevertheless, though exactitude cannot be vouched for, the loss in revenue suffered by the railways is considerable enough and is

1 *Vide* The Economic Journal, 1933, p. 222.

Road-Rail Transport

bound to increase, so that the Wedgwood Committee do not consider a 100 per cent increase in loss as impossible.

The competitive ability of the road vehicle is best seen in the low rates charged by them. Though the economic sphere of road operation is only about a hundred miles, we saw that it sometimes is as great as six hundred miles. The cost of transporting a bag of tobacco from Nipani to Bijapur comes to only 8 annas by motor lorry, whereas it is about 12 to 14 annas by rail. Similarly, for a distance of 97 miles between Dharwar and Nipani it comes to ten annas per bag by road-motor. The Marketing Reports of the Government of India are full of such examples. The chief cause for the choice of this mode of transport is, not only its comparative freight advantage but also, because it eliminates handling charges and cartage from, and to, the stations. With regard to the transport of perishables, like fruits and vegetables, the motor lorry is the best agency because of its speed and careful transit. The economics of fruit marketing has been investigated by the Gokhale Institute of Politics and Economics, wherein the great advantages of this means of transport have been looked into.

While this is true in the case of freight traffic, passenger traffic shows a like tendency, as it is in this sphere that competition has been most acute. The causes for this are the efficiency of road motor transport and the low running costs. The expenses of motor operation, we had occasion to see, come to about five annas per vehicle mile. The economic basis of road rates should be higher than the rail rate, which is about 3.5 pies per passenger mile by third class. Five pies per mile at least could be considered as an economic rate. Actually, we saw, the rate charged varies between three and six pies. For long distance traffic, it is the former, and for short distance, the latter. When, however, the bus runs on a competitive route with the

railway, the rate is reduced to as low as 2.5 per mile. This only goes to show that within short distances the advantages of road transport even outweigh the comfort of railway travel. Much of this competition is largely due to the unbalanced condition of our road system and the allocating of parallel routes to railways for road operation. Twenty-two per cent of all metalled roads run parallel to the railways and the percentage figure is highest in the North-West Frontier Province *viz.* 94 per cent. The range of operation is within a 50 mile radius, within which nearly 50 per cent of total third class traffic takes place. Various devices have, therefore, been adopted by the railways to meet this competition. The most accepted mode is that of quoting low rates on the sections affected, so as to draw traffic to the railways. In 1937, the B. B. and C. I. Railway introduced, as a special measure, third class traders' coupon-books for 500 miles on the Cawnpore-Achnera and Bharatpur-Agra sections. Another method intended to increase railway revenues has been to raise rates on distances exceeding fifty miles, for it is within fifty miles that the competition offered is keenest. Besides these, almost every railway has popularised "Go as You Please" and "Zone tickets" to attract traffic. To add to this, all attempts are being made to make the conditions of third class travel more comfortable, and endeavours have been made to meet its requirements as far as possible. Similarly, with respect to goods traffic, rate reductions have been offered in a number of cases. From 1st April 1937, the Bengal Coal scale of rates without the surcharge was introduced on important sections on the East Indian and Bengal Nagpur Railways. Similarly, on the N. W. Railway a rebate of 20 per cent of freight charges was allowed on raw full-pressed cotton for consignments booked from any station on the N. W. R. North or East of Samasata to Cawnpore, Delhi and Morar Road. The

Road-Rail Transport

conditions of such grant were that a minimum consignment of 75,000 maunds must be booked and that no consignments were to be sent by other means of transport.² In spite of such measures, competition has not ceased to exist. The East Indian Railway reports that there was a number of buses operating on competitive and short-circuiting routes and that reduced fares had to be applied on 45 such sections. On the B. N. Railway, in addition to passenger traffic competition, there was goods traffic competition, and on the B. N. W. Railway, third class tickets at $1\frac{1}{2}$ class fares were issued to meet this competition. Needless to say, such rate reductions and offer of counter attractions cannot by themselves solve the problem adequately. Something more than mere propaganda and advertisement is necessary. The railways must recognise that within their respective spheres of influence, each means of transport has its own advantages, and is supreme. Within bounds, each ought to be complementary to the other. Competition is advocated by some as essential, and the Smithian remark 'Competition is the life of trade' is brought in to support it. True, competition does result in improvement of service, but if left unchecked it is bound to lead to disorganisation. A healthy control is, therefore, necessary, and the means whereby this could be effected have been dealt with in the preceding chapter. But something more than mere control is necessary. As Jackman says, "The elimination of the wild-catters, the boot leggers or the fly-by-nighters will not alone cure the trouble." Control has got to be supplemented by measures of co-ordination. To quote the Salter Committee, "it would be to the great benefit of all concerned, if the relations between different sections of the transport industry became such that they were less concerned with mutual competition than with the organisation of comple-

2 Railway Administration Report, 1937-38, p. 53.

mentary functions; their stimulus being to afford common carrier services which (with the advantage of the economies and the combined facilities so possible) would make it worth while for the trader and the industrialist to resort to them and less to the employment of vehicles of their own." 3

The best way to achieve this is by effecting a co-ordination of the different services. Co-ordination may be of three sorts, (1) voluntary co-operation between different concerns, (2) co-ordination effected through railways taking the road and other services for operation, and (3) statutory or quasi-legal co-ordination. Voluntary co-operation is easiest to achieve, and for its consummation depends upon the existence of equal partners, and is best suited to serve local purposes. Even for this, the road undertaking must be large enough to elicit respect from the railway or else, it would get subordinated to the latter. However, it has been possible to achieve this even in India. For example, the out-agency system adopted on the South Indian Railway effects a co-ordination between the two means of transport. The basis on which this is done is that mutual facilities are offered, each one using the other's booking offices for through-journeys, use of stations and the timing of services to suit each other's convenience. It must be remembered that such co-operation would result in great mutual benefit. The road service, by working in the interior of the country, could feed the railways with much needed traffic, and they, in their turn, could draw the traffic the railway offers, thus enriching each other's revenues. Such co-operation, however desirable, is generally possible only in the case of road services that operate on feeder routes and not in competition with the railways on parallel roads, for this would not prevent the

3 Salter Committee on Road-Rail Transport, p. 34.

Road-Rail Transport

co-ordinated system from itself being attacked by other undertakings.

In some quarters it is suggested that the railways themselves should take to the roads. The North-Western Railway and the Nizam's State Railway in India are two examples of this. In South Africa, the Railways have been given extensive road powers. The Wedgwood Committee found itself in favour of this suggestion and asked for the railways to be provided with power (1) to run road services themselves or (2) to hold a financial interest in undertakings providing passenger or freight services for hire and to enter into working agreements with such undertakings with the object of co-ordinating road and rail facilities, and (3) to make agreements with contractors for the running of road services whether on a profit sharing, charter-hire or other basis.⁴ The M. & S. M. Railway's proposed scheme of running co-ordinated road and rail services comes under the second category. The general implications of the scheme, so far known, are that the Company will hold 51 per cent of the shares of the new undertaking that is to come into existence, and the private operators would hold the rest. The latter would thus have a voice in the determination of policy, but, in virtue of the fact that the railway possesses a larger percentage, its view is likely to predominate.

The power to run road services was conferred on the Indian Railways in 1932 by the Indian Railways Amendment Act. Clause (e) of section 51 of the Indian Railways Act runs as follows: "Any Railway Company, not being a Company for which the Statute 42 and 43, Victoria, chapter 41, provides, may from time to time exercise with the sanction of the Governor-General in Council all, or any, of the following powers, namely—

4 *Vide* Wedgwood Committee Report, p. 96; para 159.

Conclusion

(e) it may provide and maintain any means of transport which may be required for the reasonable convenience of passengers, animals or goods carried or to be carried on its railway.''⁵ It would appear that, as this sub-section reads, no railway could run or own a road service of its own as a feeder to its own railway unless such traffic carried is through-booked over the railway. Obviously, this precludes the railway from entering the field of road operation on its own to obviate the mal-effects of the competition offered by other services. The Associated Chambers of Commerce of India and Ceylon at their meeting in December 1930, resolved that the Government should be moved to take steps to amend the Act so as to allow State and Company managed lines to operate road services subsidiary to theirs.⁶

The advantages of a railway operating a road service are patent. It could operate the feeder roads and thus be able to tap the interior parts of the country for new traffic. Being flexible, the motor vehicle could bring in considerable traffic this way. It could also run the service to train timings and thus give the travelling public the benefits of a unified means of transport. A motor vehicle could easily go right to the door of the consignor or consignee and collect or deliver the goods right at their godowns. On unremunerative branch lines, the road service would be made to operate efficiently and cheaply. During the periods when traffic is dull the road service could be operated instead of incurring great expenditure on running a train; and when traffic is particularly heavy, these vehicles could be run in addition. While many of these advantages could be derived through voluntary co-operation, the railways would naturally prefer to have their own services which would be entirely subordinate to them.

5 *Vide* Indian Railways Act 1890, Section 51 (e).

6 Madras Chamber of Commerce Report, 1932.

Road-Rail Transport

Statutory co-ordination might be effected in a number of ways. Control exercised in the matter of granting licences on the lines suggested above would by itself effect this. At the other extreme is the monopolisation of services. The road undertakings could be asked to work in co-operation with the railways and, failing this, the Government could compel them to do so. In other words, a monopoly could be created under Government aegis to undertake the various services. The Ministry of Home Affairs in North Ireland appointed a Commission to go into this question and expressed itself as follows:—

“ If there is a transport undertaking within a city which has large statutory powers and obligations but, is subject to competition from another form of transport which is untrammelled, the result is certain to be that the free competitor will select the most profitable routes and will cut in on the profits of the statutory undertaking on these routes, but will ignore the less profitable routes and, though the densely populated areas may achieve some advantage, at least temporarily from the competition as a result of increased facilities and possibly cut fares, the general transport of the city must suffer owing to the impaired capacity of the main undertaking to give a proper service to the less fortunate route for which it is obliged to cater.”⁷ In view of this, the Commission found itself in favour of monopolisation of transport services.

In England, the London and Home Counties Traffic Advisory Committee suggested a scheme for the co-ordination of London traffic on the following lines: (1) common unified management, (2) pooling of traffic receipts to enable prior charges to be met by all the participants and (3) a controlling body to safeguard public interest. The advantage of this scheme of statutory co-ordination would lie in the fact that no new service would be

7 Quoted from Pilcher, *Economics of Road Transport*, p. 180.

permitted unless a need for it arose. In other forms of co-ordination, the door was open for private undertakings to come in and even wreck the co-ordinated system. However, statutory co-ordination is not possible except in small regional areas such as municipal towns or cities. The London Passenger Transport Board which came into existence on the passing of the Road and Rail Traffic Act of 1933, exemplifies this type of co-ordination. Here the whole of the traffic needs of London are catered for under the direction of this Board which, on its inception, automatically took over the private companies in lieu of a monetary compensation.

The general view, therefore, is in favour of monopolisation of transport services. Firstly, it would eliminate competition. In the absence of this, the individual road operator would cut his fares so low as to be a menace to the other undertakings. If he cannot get a return load which would pay all his expenses, he would be satisfied with a partial load, and would even quote low rates just enough to pay his petrol and other operating expenses. Free competition would inevitably tend to reduce average receipts per vehicle. It is dangerous to public safety, because it would lead to racing and other methods intended to "nurse" the traffic. The ability of a competitive concern to raise capital for expenditure on improvement of service would be very little. Excessive provision of services necessarily leads to a low return on capital invested, and it is this low return which would, in its turn, act as a wet blanket on further investments. Lastly, wage conditions are not likely to be as good as in the case of a monopoly. Monopolisation would eliminate all these difficulties. It would prune away uneconomic expenditure and make for comprehensiveness, economy and public safety.

The monopolisation of transport services in large cities like Bombay, Calcutta and Madras is quite desirable. A

Road-Rail Transport

Public Transport Board could be set up which would take over all the existing companies on payment of a compensation. It could be suggested that these concerns should be taken up and instead of a lump cash payment could be given a share in the management so that the controlling authority may be in a position to get all possible views pertaining to its management. Such a monopoly should, preferably, be public, since a private monopoly might be unscrupulous in its method of organisation and might inflict high fares and rates on the public. The Municipalities and the public city corporations are the best suited for this. They would know best how far there is the need for the provision of services and which routes have got to be operated, so that the area served may not only get the benefit of a new service but also experience an enhancement in land values. Being imbued with public spirit, and existing to serve the public, these bodies would be just those agents which should be in control. The task before them would be difficult, and they have got to be wary, for "it would be no solution of the evils which arise from competition, if for them were substituted the evils which may arise from monopoly." 8

The whole position has been succinctly summed up by Mr. Herbert Morrison thus:—

"I suggest, therefore, that we are driven to the conclusion that if we desire to reduce meticulous interference with, and supervision of, the management and ownership in which we can place far greater trust than in that of a private monopoly, in short, the best way to avoid the largely imaginary conservative objections to Socialism is by socialisation. Once the public is convinced that the public ownership and efficient management by a public concern for the public good is the basis of our policy, the sooner the public will be ready to concede greater

8 Transport Co-ordination: K. G. Fenelon, p. 82.

freedom to the management. For ownership and management by a public body, coupled with the principles of management in the public interest, which would be laid down in the statute creating the new authority, means that efficient public service is the prime purpose for the transport monopoly.”⁹

The co-ordination of transport in Berlin may be taken as one example of this co-ordination. For this purpose, the Municipality of Berlin was empowered to acquire the majority of stock in the underground electric system, the street railway system and the motor bus concerns. The undertakings were all amalgamated under the Berlin-Verkehrs-Aktiengesellschaft or the Berlin Traffic Company. The Management of the whole company was entrusted in the hands of a Committee consisting of a Town Councillor-Chairman, three members of the Magistracy, one of whom was the Town Treasurer, and eight Town Councillors. These members were responsible for conducting the co-ordinated system on lines directed to suit the public convenience. On the technical side also, there was due representation. Five executive members of the B. V. G., i.e., the Berlin Transport Company, each representing the five following departments *viz.* Traffic, Staff, Technical, Commercial and Underground Railway Construction, were taken on the board to give expert guidance in the proposed scheme. Nor were the workers' interests unrepresented. Two Workmen's representatives also were allowed seats on the management, so that it was made a thoroughly representative body. The omnibuses and trams were made to subsidize the railways, as is done in Hyderabad. Besides this, there is a Central Board comprising of the Management of each undertaking, and, though each system was managed separately, unification was effected under the Central Committee which guided policy. This German

9 Herbert Morrison: *Socialisation and Transport*, p. 79.

Road-Rail Transport

example is but one instance of the manner in which co-ordination has been effected, and that is sufficient to show the organisational basis of bringing about co-ordination. The principles everywhere are just the same—*Central control, comprehensive plans and public management.*

In deciding whether a public body should undertake a road transport service, certain points have to be considered. There is no sanctity attached to public undertakings of such services. The guiding factor in deciding whether or not a public body, say a municipality, should enter the field of private enterprise is that of public need. It is not sufficient if it were found that a road service would be a financial success if undertaken by that body. What should be established is that that alone could offer to the public adequately the service it is in need of. In certain cases private enterprise would not be forthcoming, as it was in the case of railway construction. But the essential utility of it is so great that the State had to undertake that responsibility either by itself taking it up or by subsidizing private concerns. Road transport is not a field wherein there is a dearth of private enterprise, so that a public service would be superfluous. Of course, the great elasticity in the demand for transport services should be a facilitating factor, but the ultimate criterion should be that of efficacy of operation. The comparative advantages of private and public management should first be studied, and only if the latter were found advantageous, on balance, should that be adopted. A public transport system would have the advantage of basing fares on the cost of service principle and would thus ensure a uniformity in the rate structure. But, under existing conditions, the rates and fares charged are so low that the advantages accruing from public management are not likely to be very great. A public monopoly would, however, introduce a

certain amount of conservatism in the administration of road services. Restricted competition is the *sine qua non* of progress, and, as transport services need to be cheap and efficient, the advantages of private operation are overwhelming. In short, the governing principle should be that of social good. Where society stands to gain by a public monopoly, it should be so. The possibilities of such a public monopoly are great in the case of large cities with heavy daily flows of traffic. The advantages of regular non-competing services in urban areas are specially great. But apart from these, there is generally not much scope for a monopoly, public or private, elsewhere. In the operation of services in the interior of the districts, a monopoly would be unnecessary and irksome, for, in the absence of competing services, the rate may be raised so high as to penalise traffic. In all such cases an adequate and effective control of road undertakings would answer our purpose admirably.

Mr. Herbert Morrison makes a strong case for the socialisation of transport. The usual arguments against competition are trotted out by him:—that ability to raise capital depends upon profitability, and that free competition by leading to excessive duplication of services, lowers the rate of return on the capital invested. Under free competition, the less paying, though, essential routes, are starved of their requirements because the transport undertaking concentrate only on the most paying routes. He, therefore, advocates routes licensing on the basis of population so that the traffic needs of particular areas may be well provided. Competition can be only tolerated when it guarantees good wages and good conditions of work. It should be provided at the minimum cost and should allow of the free expenditure of money on development and modernisation. Obviously then, a public monopoly would be best suited to undertake this. That was the

Road-Rail Transport

conclusion arrived at by the 15th Annual Conference of the London Labour Party in 1928.

As opposed to this, we have the views of Commissioner J. B. Eastman. The American believes in the efficacy of free competition and condemns any measure that would make for a rigid state structure. "A further danger that we must be on guard against in fixing minimum rates, is the establishment of an artificial and rigid method of rate making which will impair the incentive which free competition gives the carriers to increase the efficiency and economy of their operations. When it is borne in mind that the amount of transportation to be performed is not a fixed and static quantity, but one capable of expansion as facilities which lower costs are made available, it is not difficult to realise the danger to the development of the country if this incentive to improvement is removed or impaired." ¹⁰

Whatever be the advantages of such a scheme of monopolisation, its scope is limited. We cannot effect an entire monopolisation of the whole transport system of India. We have, therefore, to fall back upon a method of control that would stabilise the conditions of motor transport and make them wholesome. The licensing system is at once the most effective and the easiest to adopt. How this could be effected has been amply shown in the foregoing chapter.

This concludes our study of motor transportation and the control thereof. We have in the foregoing pages attempted, however meagrely, to study the position of the industry. The word *industry* has been used advisedly because motor transport service is becoming rapidly an avenue of employment. Hitherto, the profession was not

10 J. B. Eastman: "Adjustment of Rates between Competing forms of transportation".

looked upon with that amount of consideration that is its due. But, with the increase in the concerns operating it, and with an improvement in the conditions of operation, this early stigma attached to it is fast vanishing. The Travancore State's policy of recruitment of only graduate-conductors who have had all the ennobling and refining influences of academic life marks a new era in the growth of the industry.

We have briefly studied the road problem as it affects this Presidency and have found that there is a great need for a correction of its unbalanced position. It is our firm conviction that not only must this be effected with expedition, but also the physical qualities of the road should be improved. India is mainly an agricultural country in which the towns are all too few. We have to peg our faith in our villages. This by no means should be construed as an acceptance of the Gandhian doctrine of Village Economy. It is not suggested here that we should revert to the Halcyon days of primeval simplicity when all was peace and quiet save, shall we add?, for the whurr of the "*Charka*." All that is to be conveyed here is that the villages form an integral part of our economy and, as such, they have got to be developed industrially and agriculturally. The segregation of the villages is fatal to national economy. They have got to be nursed, revived and made bulwarks of the nation. They have got to be linked up with the main centres of the country, and for this, what is needed as never before is, a wide and far flung network of roads so laid as to be entirely complementary to the other modes of transport, especially the railways. India is a land of distances and we cannot well afford to do away with the railways. They must, and will, continue to be our most important agent of transportation. The road services can only be complementary to them and within their sphere, they are '*non pareil*'.

Road-Rail Transport

Thus, the crying need in any scheme of transport co-ordination is, if such a phrase be allowed, road reconstruction. We want roads, more roads and better roads.

In the chapter on expenditure we have analysed the costs of road operation and have studied the working of a few big organisations run on up-to-date lines. This study of working costs reveals strikingly the crushing burden of motor vehicles' taxation. So heavy is it that India, and Madras in particular, offers the example of being the one country where this industry has been relentlessly taxed. In the anxiety to solve the problem of road-rail competition, the inherent virtues of motor transportation should not be forgotten. Within a short radius, there is no other mode of transport that could compete with it in the matter of economy, flexibility and efficiency. The running expenses of a motor omnibus are low in comparison with those of other transport undertakings, barring the tramways. Being capable of running wherever a motorable road exists, they are the one means that can reach every corner of the country and weave the villages into the warp and woof of our economy. The present tendency of motor transport is to work the most paying routes, and to concentrate in the Metropolitan and other towns. It is our firm belief that we have not yet reached the stage of satiety. The field for motor transport is still quite clear and the scope for expansion is unlimited. This could be achieved, not by a number of concerns tapping the traffic emanating from the towns, but through rural services. If only every village of some importance and served by a road were to be linked with the rail heads and important markets, we could not have too many of such village roads and motor services.¹¹ If this is to come about, as it ought to, then, the present taxation of motor

11 *Vide* Jayakar Committee Report, p. 47.

vehicles must be reduced in the case of services operating in the rural areas. We need not feel that this would be difficult of achievement. Each such potential operator could approach the Road Transport Board and submit the details of service he wishes to offer. He may state the exact number of vehicles he wishes to run, the capacity of the vehicles he wishes to ply—seating capacity in the case of passenger services, and laden weight for freight traffic—and the frequency of service he is likely to offer. The transport authority may, thereupon, investigate into the possibilities of the case and the probable financial success of the undertaking and, then, if it feels so, make further suggestions to suit the requirements of the area so served and issue a permit allowing him to do so. In this case a special permit designated by any convenient letter of the alphabet, say *R*, may be issued indicating the fact that it is to be used strictly on rural service. The grant of such a permit should automatically entail a reduction in the tax payable. The traffic being light, a light vehicle would well answer the purpose and would have the advantage of working on a low operating ratio. The rates and fares could, likewise, be low because a high rate would bear too heavily on the rural folk. The need for the low rates may not be for long, for, once the villages are connected with the towns, automatically, marketing facilities would be improved and the staying power of the agriculturist would be increased, and with an increase in this purchasing power, rates may, if required, be slightly raised. The Governments need not despair of loss of revenue due to favourable tax reductions, because any such services to be run are bound to be new, catering for *new traffic*, so that these taxes, though less on the usual basis of computation, would represent a net accretion of revenue which could be used to finance the road schemes. A cheap

Road-Rail Transport

road would well answer this purpose, and the possibility of laying out good earth roads as in Australia should be investigated into. Surely then, the whole scheme would be self-sufficient and would go a long way towards that national regeneration which is the aspiration of every true son of the soil.

QUESTIONNAIRE.

1. Name of the service or concern.
2. Names of the routes operated with mileage.
3. Number of vehicles on each route and total number on the road.
4. Number of trips per vehicle and mileage run.
5. On what are they run—fuel used, and average consumption per vehicle?
6. Nature of the taxes paid and the value thereof.
7. Are there any competitive services on the same route? If so, what are they?
8. What are the rates charged—Fare table and on what basis are the rates fixed?
9. What is the number of conductors and drivers?
10. By whom are the Inspecting staff appointed?
11. What is the frequency of the service offered?
12. What are the scales of pay of drivers and conductors?
13. What is the average number of passengers carried per vehicle day?
14. Is there any freight traffic carried besides passenger traffic; If so, what are the commodities offering for traffic and in what bulk do they offer?
15. What are the rates charged for this type of traffic?
16. Is there any Parcels System?
17. Are there any Postal Contracts?
18. What is the average life of a bus or truck, the life of a tyre and the cost thereof?
19. What is the relative advantage of a Diesel Engine over a Petrol Engine and how far is it more economical?

20. What are the effects of the Petrol Tax?
21. What are the possibilities of coal as a substitute?
22. What are the possibilities of long distance motor transport? Within what limits would it be really effective?
23. What is the nature and condition of existing roads? How far are they responsible for general wear and tear of vehicles?
24. How is routing done? Which is the authority that assigns these routes to different concerns?
25. In matters of dispute, which is the final Tribunal?
26. Is the Workmen's Compensation Act in operation in transport services? What is the nature of the compensation offered?
27. How far are private taxis competitive? Within what distance are they effective?

STATISTICAL APPENDICES.

- A. Statements pertaining to Working Results
of Indian Railways
- B. Statements pertaining to Motor Vehicles
in India
- C. Statements pertaining to the working of
the State Transport System of Travan-
core
- D. Statements pertaining to the United Motors
Service of Coimbatore
- E. Statements relating to the London Passen-
ger Transport Board
- F. Statements referring to the working of the
Nizam's State Transport System
- G. Comparative Statement of Bus and Canal
Transport rates in West Godavari.
- H. Specimen forms of Bin Cards used on the
United Motors Service of Coimbatore
- Bibliography
- South Indian Railway Map
- Route Map of the U. M. S. Coimbatore
- Graphs

APPENDIX

FINANCIAL STATISTICS OF STATE-

(FIGURES IN
1924-25. 1925-26. 1926-27. 1927-28. 1928-29. 1929-30.

Mileage	26,985	27,090	27,664	28,086	29,111	30,878
Capital at charge at end of year (in crores) ..	635	654	681	714	739	770
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Gross traffic receipts ..	1,00,13	98,94	98,42	1,03,43	1,03,73	1,20,70
Operating expenses ..	51,65	52,99	52,89	53,06	54,22	55,59
Depreciation Fund ..	10,35	10,67	10,89	11,38	12,00	12,59
Net Traffic receipts ..	38,13	35,28	34,64	38,99	37,51	34,52
Net miscellaneous receipts after deducting miscellaneous charges and surplus profits payable to companies.	-1,07	-1,19	-1,27	-87	-37	-2
Net revenue ..	37,06	34,09	33,37	38,12	37,14	34,50
Interest charges ..	23,90	24,81	25,87	27,27	29,33	30,46
Surplus ..	13,16	9,28	7,50	10,86	7,81	4,04
Paid as contribution to general revenues ..	6,78	5,49	6,01	6,28	5,23	6,12
Transferred to railway reserve ..	6,38	3,79	1,49	4,57	2,58	-2,08
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Ratio of working expenses (excluding depreciation fund) to gross traffic receipts..	51.6%	53.6%	53.7%	51.3%	52.3%	54.1%
Ratio of working expenses (including depreciation fund) to gross traffic receipts..	61.9%	64.3%	64.8%	62.3%	63.8%	66.4%
Ratio of net traffic receipts to capital at charge ..	6.0%	5.4%	5.1%	5.5%	5.1%	4.5%
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

* Excludes Bezwada-Masulipatam Railway.

A. 1.

OWNED RAILWAYS: 1924-25 TO 1938-39.

LAKHS OF RUPEES).

1930-31. 1931-32. 1932-33. 1933-34. 1934-35. 1935-36. 1936-37. 1937-38. 1938-39.

31,197	31,640	31,642	31,644	31,636	31,782	31,722	29,680*	29,725
783	790	789	787	787	789	789	754	755

95.10	86.63	84.43	86.63	90.20	90.65	95.47	95.01	94.48
-------	-------	-------	-------	-------	-------	-------	-------	-------

54.39	49.31	49.08	49.50	50.27	50.87	50.23	50.37	..
-------	-------	-------	-------	-------	-------	-------	-------	----

13.07	13.46	13.77	13.56	13.72	13.25	13.15	12.57	12.56
-------	-------	-------	-------	-------	-------	-------	-------	-------

27.64	23.86	21.58	23.57	26.21	26.53	32.11	32.07	30.44
-------	-------	-------	-------	-------	-------	-------	-------	-------

-11	1	1.10	1.05	53	86	-9	-5	23
-----	---	------	------	----	----	----	----	----

27.53	23.87	22.68	24.62	26.74	27.40	32.02	32.02	30.67
-------	-------	-------	-------	-------	-------	-------	-------	-------

32.72	33.07	32.91	32.58	31.80	31.39	30.81	29.26	29.30
-------	-------	-------	-------	-------	-------	-------	-------	-------

-5.19	-9.20	-10.23	-7.96	-5.06	-4.00	-1.21	2.76	1.37
-------	-------	--------	-------	-------	-------	-------	------	------

5.74	2.76	1.37
------	----	----	----	----	----	----	------	------

-10.93	-4.95
--------	-------	----	----	----	----	----	----	----

57.2%	56.9%	56.7%	55.8%	54.7%	54.9%	51.4%	51.6%	53.1%
-------	-------	-------	-------	-------	-------	-------	-------	-------

70.9%	72.5%	73.0%	71.4%	69.9%	69.5%	65.2%	65.0%	66.4%
-------	-------	-------	-------	-------	-------	-------	-------	-------

3.5%	3.0%	2.7%	3.0%	3.3%	3.4%	4.2%	4.2%	4.2%
------	------	------	------	------	------	------	------	------

APPENDIX

STATEMENT OF ELECTRIC MULTIPLE

Year.		Route Mileage.	Track Mileage.	Number of Passengers carried.	Passenger Miles
1926-27	GIP.	29.9	71.6	16,220,076	111,584,256
1927-28	GIP.	29.9	71.6	27,360,690	192,685,663
1928-29	BBCI.	22.5	76.1	23,642,715	183,861,563
	GIP.	42.6	167.2	26,957,968	186,713,890
1929-30	BBCI.	22.50	76.10	30,860,478	237,256,562
	GIP.	129.44	324.32	32,431,391	251,547,078
1930-31	BBCI.	21.25	62.54	31,521,611	229,990,598
	GIP.	181.70	425.90	30,992,812	238,810,600
1931-32	BBCI.	21.25	62.54	32,415,856	232,723,147
	GIP.	181.70	425.90	28,664,985	206,336,592
	SIR.	18.14	36.28	3,319,478	28,140,104
1932-33	BBCI.	21.25	60.54	33,547,548	233,807,412
	GIP.	181.70	425.90	30,712,763	212,698,208
	S.I.R.	18.14	36.28	7,308,952	48,358,597
1933-34	BBCI.	21.25	60.54	33,631,308	242,585,903
	GIP.	181.70	425.90	28,853,110	211,084,529
	SIR.	18.14	36.28	7,709,675	49,898,642
1934-35	BBCI.	21.25	62.54	34,305,978	248,262,334
	GIP.	44.00	88.00	29,086,585	213,707,912
	SIR.	18.14	36.28	7,705,336	47,977,098
1935-36	BBCI.	21.25	62.54	35,031,520	254,542,124
	GIP.	44.0	88.00	30,154,822	221,498,632
	SIR.	18.14	36.28	7,123,305	43,696,214
1936-37	BBCI.	36.79	91.58	39,496,425	287,452,807
	GIP.	44.00	88.00	32,158,161	225,859,202
	SIR.	18.14	36.28	7,323,606	46,143,469
1937-38	BBCI.	36.79	91.58	45,268,892	326,156,835
	GIP.	44.00	88.00	32,826,680	233,674,790
	SIR.	18.14	36.28	8,272,477	53,501,314
1938-39	BBCI.	36.80	91.60	47,594,630	339,243,428
	GIP.	44.00	88.00	33,568,315	237,641,591
	SIR.	18.14	36.28	8,490,844	53,130,766

A. 2.

UNIT SUBURBAN TRAIN STATISTICS.

Earnings from Passengers carried.	Earnings per Passen- ger mile.	Cost per Passenger mile.	Earnings per train mile.	Cost per train mile.	Gross Ton miles. (including depart- mental)
.	2.26	3.63	1.23	1.98	..
..	2.12	3.48	1.43	2.35	..
..	2.29	2.17	2.41	2.14	..
..	2.13	3.90	1.34	2.45	..
26,27,591	2.13	2.07	1.26	1.22	502,171,132
27,10,834	2.07	3.46	0.81	1.36	603,048,934
26,88,137	2.24	1.80	1.29	1.02	449,127,062
25,53,831	2.05	3.29	0.75	1.20	625,080,145
29,11,937	2.40	1.95	1.49	1.18	418,524,404
25,68,005	2.39	3.35	0.84	1.17	555,181,776
4,26,719	2.91	2.02	0.60	0.42	52,926,815
29,10,257	2.39	1.66	1.65	1.11	392,348,295
26,48,100	2.39	3.08	0.86	1.11	554,920,784
6,72,618	2.68	1.99	0.62	0.41	81,621,688
30,47,148	2.41	1.84	1.50	1.11	437,067,105
25,91,123	2.36	3.22	0.85	1.16	549,867,078
6,88,965	2.65	1.67	0.76	0.46	68,390,546
30,45,972	2.36	1.62	1.52	1.02	404,027,347
25,79,179	2.32	3.36	0.82	1.19	564,943,665
6,47,981	2.59	1.26	0.80	0.39	63,819,532
30,98,067	2.34	1.54	1.53	0.98	402,081,930
26,65,156	2.31	3.21	0.84	1.17	571,499,550
5,79,326	2.55	1.45	0.81	0.46	58,399,635
34,72,977	2.32	1.44	1.49	0.91	449,137,803
27,10,413	2.30	3.18	0.80	1.11	584,374,325
5,71,746	2.11	1.71	0.70	0.58	57,187,247
39,39,939	2.32	1.35	1.59	0.90	487,838,726
27,91,187	2.29	3.02	0.84	1.10	580,464,239
6,60,548	2.37	1.64	0.79	0.55	67,455,613
40,81,028	2.31	1.57	1.65	1.12	489,569,775
28,39,880	2.29	3.15	0.85	1.16	594,763,555
6,74,956	2.44	1.75	0.80	0.57	67,832,364

APPENDIX

STATEMENT OF PRINCIPAL COMMODITIES CARRIED BY CLASS

Commodities.	Year 1930-31.			Year	
	Traffic in Tons.			Traffic	
	Gauge.			Gauge.	
	5' 6"	3' 3½"	2' 6" & 2"	5' 6"	3' 3½"
1. Rice in the Husk.	529,6	889,5	12,4	594,4	690,8
2. Rice not in the Husk ..	1,964,1	1,711,6	91,9	2,033,6	1,934,3
3. Coal and Coke ..	23,532,4	1,435,3	129,5	24,469,9	1,448,5
4. Gram and Pulse ..	1,571,7	786,4	62,1	1,810,2	817,6
5. Wheat ..	2,034,4	497,8	49,5	1,917,2	418,3
6. Other Grains ..	491,2	349,3	17,9	357,8	335,4
7. Gur, Jagree Molasses ..	628,3	533,6	25,5	745,1	582,9
8. Sugar refined and unrefined ..	772,4	471,1	24,5	825,2	680,3
9. Oil seeds ..	2,676,2	1,416,0	96,7	1,961,3	1,070,3
10. Cotton raw pressed ..	1,007,2	281,7	77,9	1,025,2	301,3
11. Cotton raw unpressed ..	101,4	64,1	3,2	133,4	96,1
12. Cotton manu- factured ..	615,9	291,7	15,0	764,1	339,7
13. Fodder ..	759,9	248,8	20,0	794,1	295,7
14. Jute, raw ..	913,1	646,8	Nil	677,5	561,0
15. Iron and steel wrought ..	1,428,2	340,0	27,0	1,986,2	382,4
16. Kerosine Oil (in bulk) ..	228,6	131,2	3,4	295,7	189,1
17. Total general merchandise ..	34,684,1	16,844,0	1,187,3	38,600,0	18,505,0

A. 3.

I RAILWAYS AND EARNINGS THEREFROM (IN HUNDREDS).

1935-36.	Year 1936-37.			Year 1937-38.		
in Tons.	Traffic in Tons.			Traffic in Tons.		
	Gauge.			Gauge.		
2' 6" & 2' 0"	5' 6"	3' 3½"	2' 6" & 2"	5' 6"	3' 3½"	2' 6" & 2' 0"
10,0	513,7	654,9	11,3	504,0	336,3	8,3
106,2	2,344,7	2,006,1	121,1	2,361,4	1,097,4	126,1
164,0	24,406,3	1,475,8	188,7	28,225,8	1,553,0	210,2
61,1	1,823,0	911,4	61,1	1,890,2	750,5	68,6
49,1	1,925,0	406,1	43,4	1,930,4	466,6	42,9
11,0	397,0	403,2	13,8	380,6	369,4	13,0
23,6	764,3	534,8	28,0	720,7	478,7	25,7
19,1	1,201,2	982,7	21,5	1,096,6	931,2	19,9
52,8	2,347,6	1,426,5	68,0	2,223,6	1,227,5	65,1
48,3	1,249,3	374,2	59,7	857,5	261,0	39,6
9	161,8	108,3	2,2	122,2	80,2	4,4
14,2	771,5	348,7	14,3	850,6	358,1	14,6
15,8	885,5	325,3	14,1	935,9	265,9	14,0
..	900,7	758,4	..	850,8	645,9	..
19,3	1,942,0	395,2	17,5	1,957,8	333,6	15,7
4,5	321,9	236,1	4,5	332,8	263,5	4,6
1,145,3	40,072,9	19,853,4	1,184,1	42,006,2	16,570,8	1,302,9

APPENDIX

STATEMENT OF DENSITY OF

Year.	Passenger miles per annum.		Net ton—miles
	Per running track mile.	Per route mile.	Per running track mile.
1925,26	509,331	562,389	513,225
1926-27	504,385	557,994	517,245
1927-28	530,961	587,531	549,035
1928-29	523,884	578,191	533,694
1929-30	536,636	591,287	514,177
1930-31	464,791	518,371	477,196
1931-32	411,856	450,910	430,063
1932-33	397,417	438,071	399,470
1933-34	387,769	427,821	436,876
1934-35	402,053	443,593	475,506
1935-36	409,935	452,294	479,440
1936-37	413,638	456,639	502,250
1937-38	449,430	496,301	563,357
1938-39	445,917	491,828	542,359

A. 4.**TRAFFIC ON CLASS I RAILWAYS.**

per annum.	Gross ton—miles per annum.		Train miles Per running track mile per day.
Per route mile.	Per running track mile.	Per route mile.	
566,689	1,967,670	2,172,646	11.0
572,220	2,009,201	2,221,749	11.5
607,531	2,128,611	2,355,399	11.9
589,018	2,121,524	2,341,444	11.9
566,541	2,078,954	2,290,672	11.9
529,871	1,962,205	2,178,800	11.2
470,844	1,816,337	1,988,574	10.3
440,334	1,745,634	1,924,206	10.0
481,999	1,831,464	2,020,629	10.2
524,635	1,950,309	2,151,815	10.7
528,981	1,982,831	2,187,718	10.9
554,464	2,049,278	2,262,320	11.2
622,110	2,218,921	2,450,333	12.0
598,198	2,209,002	2,436,434	12.3

APPENDIX

SUMMARY OF GROSS REVENUE RECEIPTS, STATE-OWNED RAILWAYS

Year.	Gross Revenue Receipts.			Working	
	Earnings.	Suspense.	Total.	Ordinary.	Renewals and replace- ments.
1925-26	99,72,45	32	99,72,77	56,55,49	7,98,76
1926-27	99,12,47	—5,81	99,06,66	56,37,40	8,10,55
1927-28	1,04,34,01	—9,16	1,04,24,85	54,27,16	10,95,10
1928-29	1,04,58,71	—24,96	1,04,33,75	57,55,06	9,59,85
1929-30	1,02,40,11	30,17	1,02,70,28	56,41,47	11,76,17
1930-31	94,63,40	46,26	95,09,66	56,03,10	11,39,59
1931-32	86,28,26	34,49	86,62,75	49,25,34	13,46,34*
1932-33	85,58,36	3,92	85,62,28	49,02,84	13,77,22*
1933-34	88,30,11	—48,63	87,81,48	49,65,61	13,56,48*
1934-35	96,30,01	8,52	96,38,53	53,02,31	13,71,77*
1935-36	97,34,92	—23,34	97,11,58	53,67,48	13,24,97*
1936-37	1,01,26,76	—24,50	1,01,02,26	52,77,32	13,15,02*
1937-38	1,00,30,06	15,31	1,00,45,37	52,93,68	12,56,98*
1938-39	99,50,35	11,76	99,62,11	53,90,85	12,56,11*

* *N.B.*—From 1931-32 onwards the subsequent figures relate to

A. 5.

WORKING EXPENSES AND REVENUE RECEIPTS OF (IN THOUSANDS OF RUPEES).

Expenses.		Net Revenue Receipts.	Percentage of ordinary working expenses on Earnings.	Remarks.
Suspense.	Total.			
—10,27	64,43,98	35,28,79	56.71	..
—14,72	64,33,23	34,73,43	56.85	..
11,75	65,34,01	38,90,84	52.01	..
—32,45	66,82,46	37,51,29	52.73	..
29	68,17,93	34,52,35	54.28	..
2,78	67,45,47	27,64,19	71.25	..
5,70	62,77,38	23,85,37	57.08	..
5,57	62,85,63	22,76,65	57.29	..
—16,43	63,05,66	24,75,82	56.23	Payment to worked lines.
*—8,76	66,65,32	26,96,22	55.06	2,76,99
—12,18	66,80,27	27,46,64	55.14	2,84,67
11,94	66,04,29	31,96,23	52.12	3,01,74
7,28	65,57,94	31,94,63	52.78	2,92,80
10,29	66,57,25	30,30,18	54.18	2,74,68

appropriations to Depreciation Fund.

APPENDIX

SUMMARY OF PASSENGER

Year.	Number of Passengers (in hundreds).				Passenger miles (in thousands).		
	First Class.	Second Class.	Inter Class.	Third Class.	First Class.	Second Class.	Inter Class.
1925-26	1,033,0	9,901,3	13,602,4	574,608,1	111,183	382,389	622,690
1926-27	1,012,1	10,006,3	14,944,8	578,408,6	118,492	419,939	678,244
1927-28	979,9	9,962,9	17,350,6	594,821,2	128,770	479,448	762,197
1928-29	912,5	9,585,4	17,869,5	591,742,7	126,642	463,885	764,955
1929-30	804,2	9,125,3	17,900,4	606,467,5	123,591	455,664	759,323
1930-31	670,2	8,088,8	16,188,8	550,878,7	110,176	424,623	661,538
1931-32	508,1	5,937,5	12,353,9	487,036,9	93,030	356,240	559,676
1932-33	428,9	5,278,3	10,871,1	485,316,9	82,142	320,848	518,821
1933-34	420,5	5,050,3	10,557,3	473,585,0	80,729	311,654	507,597
1934-35	405,9	4,818,0	10,315,9	481,051,2	81,771	311,402	506,970
1935-36	384,4	4,762,9	10,468,6	488,075,4	83,965	333,649	506,084
1936-37	408,4	4,589,8	11,085,2	493,835,1	86,731	337,152	533,542
1937-38	397,1	4,217,3	11,323,5	505,346,8	84,389	332,073	566,796
1938-39	385,1	4,037,5	11,375,5	514,824,8	83,072	314,777	579,340

A. 6.

REVENUE STATISTICS.

Third Class.	Average miles a passenger was carried.				Earnings from Passengers (in thousands of rupees).			
	First Class.	Second Class.	Inter Class.	Third Class.	First Class.	Second Class.	Inter Class.	Third Class.
19,215,490	107.6	38.6	45.8	33.4	1,20,42	1,89,42	1,59,61	34,76,54
19,149,575	117.1	42.0	45.4	33.1	1,17,78	1,88,30	1,61,79	33,44,02
20,334,272	131.4	48.1	43.9	34.2	1,13,71	1,95,67	1,69,33	34,89,39
20,741,654	138.8	48.4	42.8	35.1	1,12,25	1,91,89	1,66,43	33,53,82
21,714,422	153.7	49.9	42.4	35.8	1,04,45	1,83,56	1,589,6	34,11,36
19,291,889	164.4	52.5	40.9	35.0	94,06	1,70,20	1,41,34	30,24,15
17,047,872	183.1	60.0	45.3	35.0	88,34	1,53,71	1,22,89	27,75,41
16,684,643	191.5	60.8	47.7	34.4	77,95	1,47,44	1,15,14	27,91,67
16,250,400	192.0	61.7	48.1	34.3	76,07	1,42,24	1,11,54	26,79,09
16,864,746	201.5	64.6	49.1	35.1	76,83	1,41,48	1,11,92	27,04,74
17,280,420	218.4	70.1	48.3	35.3	77,96	1,45,80	1,11,35	27,20,57
17,313,234	212.4	73.5	48.1	35.1	81,15	1,47,05	1,14,54	26,90,46
17,863,988	212.5	78.7	50.1	35.3	79,16	1,44,40	1,22,17	27,62,69
17,765,604	215.7	78.0	50.9	34.5	77,09	1,39,20	1,23,01	27,84,10

APPENDIX

SUMMARY OF PASSENGER AND GOODS REVENUE (IN THOUSANDS)

Year.	Average rate charged per passenger per mile.					Train and Engine	
	First Class.	Second Class.	Inter. Class.	Third Class.	Pas-senger.	Goods.	Mixed.
1925-26	20.8	9.51	4.92	3.47	69,541	57,411	30,836
1926-27	19.1	8.60	4.58	3.35	74,967	57,328	29,717
1927-28	17.0	7.84	4.27	3.25	79,599	59,874	30,684
1928-29	17.0	7.94	4.18	3.10	83,473	61,358	30,905
1929-30	16.2	7.73	4.02	3.02	89,377	59,969	31,952
1930-31	16.4	7.70	4.10	3.01	88,673	55,943	31,095
1931-32	17.2	8.28	4.22	3.13	81,681	48,294	30,014
1932-33	18.2	8.82	4.26	3.21	80,318	44,998	31,657
1933-34	18.1	8.76	4.22	3.17	80,089	46,955	33,188
1934-35	18.0	8.72	4.24	3.08	81,421	50,527	34,161
1935-36	17.8	8.39	4.22	3.03	83,681	51,223	35,450
1936-37	18.0	8.37	4.12	2.98	86,166	54,856	34,936
1937-38	18.0	8.35	4.14	2.97	90,265	58,572	29,753
1938-39	17.8	8.49	4.08	2.95	93,420	60,028	29,059

A. 7.

STATISTICS AND OF TRAIN AND ENGINE MILEAGE OF MILES).

mileage. Total Engine and Shunt. ing. miles.	Tons of goods carried (in thousands).	Net ton miles (in thousands).	Average miles a ton of goods was carried.	Earnings from goods carried (in thousands).	Average rate charged for carrying a ton of goods per mile.
210,824	79,859	19,900,018	249.2	64,42,17	6.22
217,845	85,833	20,374,679	237.4	65,00,65	6.12
228,210	89,791	21,902,222	243.9	69,40,65	6.08
234,614	90,835	21,889,177	241.0	71,15,55	6.24
239,027	87,376	21,524,637	246.4	68,82,76	6.14
229,411	83,377	20,406,477	244.7	64,41,10	6.06
206,005	74,575	18,346,765	246.0	58,72,51	6.15
200,104	70,601	17,202,541	243.7	56,88,85	6.35
204,374	76,513	18,706,817	244.5	61,58,54	6.32
212,803	84,503	20,351,635	240.8	64,34,53	6.07
217,479	86,932	20,553,684	236.4	64,68,93	6.04
223,931	86,263	21,435,458	248.5	69,79,43	6.25
226,969	87,289	22,776,688	260.9	68,66,04	5.78
232,919	88,361	22,158,840	250.8	68,56,96	5.98

APPENDIX B. 1.

MOTOR VEHICLES IN INDIA.

Year.	No.	Motor cars including Taxi Cars.	Motor Cycles.	Freight, vehicles and lorries.	Total.
1929-30	I	1,28,863	25,377	37,950	1,92,690
	M.C.	11,344	2,876	1,711	15,931
	M.P.	7,061	1,777	6,392	15,230
1931-32	I	1,39,226	24,612	46,888	2,10,726
	M.C.	12,972	3,113	2,011	18,096
	M.P.	7,608	1,708	6,412	15,728
1932-33	I	1,33,216	21,033	39,772	1,94,021
	M.C.	13,606	3,168	2,094	18,868
	M.P.	7,251	1,493	5,691	14,435
1933-34	I	1,41,415	21,118	40,427	2,02,960
	M.C.	14,314	3,196	2,171	19,741
	M.P.	7,617	1,382	5,676	14,675
1934-35	..	..	..	..	..
1935-36	I	1,09,565	12,411	39,836	1,61,812
	M.C.	4,291	45	548	5,296
	M.P.	8,461	1,397	6,433	16,291
1936-37	I	1,18,825	11,637	40,941	1,71,463
	M.C.	5,062	512	797	6,371
	M.P.	9,706	840	4,196	14,742
1937-38	I	97,872	9,385	39,172	1,46,429
	M.C.	5,446	495	739	6,680
	M.P.	9,686	876	4,548	15,110

I: India. M.C.: Madras City. M.P.: Madras Presidency.
 Figures from 1935-38 refer to vehicles actually running.

APPENDIX B. 2.

STATEMENT SHOWING THE NUMBER OF ALL CLASSES OF MOTOR VEHICLES RUNNING IN THE DIFFERENT PROVINCES OF BRITISH INDIA AT THE END OF MARCH 1939.

Provinces	Motor Cars including Taxi Cars.	Motor Cycles including Scooters and auto-wheels.	Heavy Motor vehicles (lorries, buses etc.).	Total.
	No.	No.	No.	No.
Bengal (excluding Calcutta and Howrah Town)	4,459	282	2,343	7,084
Calcutta including Howrah Town.	16,864*	785	3,484	21,133
Bombay	25,126	1,840	7,772†	31,738
Madras City	5,244	410	878	6,532
Madras Province excluding Madras City	9,131	909	4,980	15,020
United Provinces	12,921	945	3,550	17,416
Punjab	10,022	1,857	8,353	20,232
Bihar	5,491	573	1,174	7,238
Orissa	683	114	314	1,111
Central Provinces and Berar	4,208	820	2,095	7,123
Sind	2,713	472	978	4,163
Delhi Province	1,601	388	219	2,208
N. West Frontier Province	5,685‡	1,707	4,506	11,898
Ajmer Marwara	668	82	188	938
Assam	3,140	183	2,088	5,411
Total	107,956	11,367	39,922	159,245

* As at 31st December 1938.

† Excluding buses which are included under motor cars etc.

‡ Progressive figures from commencement of registration.

APPENDIX B. 3.

NUMBER OF MOTOR CARS IMPORTED.

Year.	U.K.	U.S.A.	Canada.	France.	Italy.	Other Countries.	Total.
1927-28	3,600	6,031	3,400	538	1,367	186	15,122
1928-29	3,645	10,145	4,366	277	967	167	19,567
1929-30	3,758	9,620	2,318	364	1,150	189	17,399
1930-31	2,885	5,098	3,250	261	917	190	12,601
1931-32	2,178	3,368	676	161	510	327	7,220
1932-33	3,958	1,201	296	84	226	436	6,201
1933-34	5,348	2,227	1,715	62	221	186	9,759
1934-35	6,311	5,564	2,057	26	267	209	14,434
1935-36	6,744	3,851	2,328	13	210	444	13,590
1936-37	6,337	3,870	1,290	42	382	1,018	12,939
1937-38	6,419	4,876	1,612	98	281	2,411	15,697
1938-39	5,117	3,170	972	66	232	1,501	11,058

(Note here the discrepancies in the figures for 1935-36 and 1936-37 as published in the reports for 1936-37 and 1937-38).

BELOW FIGURES FOR 1935-36 AND 1936-37 AS PUBLISHED IN 1937-38.

Year.	U.K.	U.S.A.	Canada.	France.	Italy.	Other Countries.	Total.
1935-36	6,057	3,752	2,328	11	207	422	12,777
1936-37	5,677	3,742	1,290	41	382	984	12,116

IMPORTS OF OMNIBUSES, VANS ETC.

Year.	U.K.	U.S.A.	Canada.	Other countries.	Total.
1927-28	447	3,699	4,268	268	8,682
1928-29	473	7,572	4,610	135	12,790
1929-30	398	12,017	2,779	92	15,306
1930-31	258	6,197	2,397	61	8,913
1931-32	435	3,236	598	33	4,302
1932-33	517	1,793	338	28	2,676
1933-34	528	3,692	1,243	33	5,496
1934-35	1,171	6,559	2,058	185	9,973
1935-36	982	5,051	2,335	102	8,470
" *	958	4,942	"	"	8,337
1936-37	1,217	6,012	1,719	212	9,160
" *	1,202	5,899	"	198	9,018
1937-38	2,337	10,035	2,197	508	15,077
1938-39	607	5,095	1,958	148	7,808

* N.B.—These are revised figures for the same year.

APPENDIX B. 4.

COST OF RUNNING A CHEVROLET 30 CWT.* BUS (23 SEATER) AT Rs. 3,500 COMPLETE.

Annual Standing Charges—				Rs.
Licences—				
Registration Fee	..	..	..	16
Wheel Tax	..	..	..	..
Government Permit	..	..	..	16
Provincial Taxes	..	..	..	690
District Board or Municipal taxes	..	..	..	1,110
Brake Testing fee	..	..	..	50
Any other taxes	..	..	..	..
				1,882
Insurance—				
Vehicle, Goods	..	..	..	250
				(ascertained from Commercial Insurance Company).
Depreciation—				
On life of bus, say, over 3 years less cost of tyres	..	..	..	1,166
Wages—				
Driver (Rs. 40 per mensem)	}			960
Cleaner (Rs. 15 per mensem)				
Conductor (Rs. 25 per mensem)				
Establishment Charges (including sundries etc.)	..	..	..	500
Garage rent at say Rs. 10 per month	..	..	..	120
Interest on Capital of Rs. 3,500 @ 6%	..	..	..	210
Total standing charges per annum				5,088
Running Charges—				
Petrol in gallons—1,200 gallons @ Rs. 1-9-0 @ 20 miles per gallon	..	..	..	1,875
Oil and Grease	..	..	..	200
Tyres (3 sets @ Rs. 320)	..	..	..	960
Repair Charges	..	..	..	300
Spare Parts	..	..	..	300
Total running cost				3,635
Add total standing charges				5,088
Total				8,723

* *Vide* Mitchell-Kirkness Report, Madras Section, p. 49.

APPENDIX B. 5.

HIGH TAXATION DRIVES BUSES AND LORRIES OFF THE ROAD.*

The Annual Provincial Taxation on a 23 seater Bus in.		Actual figures in Madras Presidency Buses.	
Madras Presidency is Rs. 690† ..	..	Estimated number running at commencement of year 1931-32.	6101
Bihar and Orissa is Rs. 232 ..	..	Actual number running in the first 3 quarters of 1931-32 ..	3000
Central Provinces is Rs. 200 ..	..	Actual number running in the fourth quarter of 1931-32 ..	2491
Punjab is Rs. 125 ..	..	Actual number running in the first quarter of 1932-33 ..	1935
Bengal is Rs. 120 ..	..	....
Bombay is Rs. 120 ..	..	Commercial Lorries.	
United Provinces is Rs. 60 ..	..	....
Baluchistan is Rs. 20 ..	..	Actual number that paid taxes in 1931-32 ..	843
North West Frontier Provinces and Sind is Rs. 20 ..	..	Actual number in first quarter of 1932-33 ..	443

* *Vide* Mitchell-Kirkness Report, Madras Section, p. 45.

† Exclusive of District Board Licence Fees.

APPENDIX B. 6.

* STATEMENT SHOWING THE LICENCE FEE LEVIED
BY DISTRICT BOARDS ON A 23 SEATER BUS
(FOR 100 MILES).

Serial No.	Name of District Board.	Amount of licence per annum.	
1.	Anantapur ..	.. 1,000	
2.	North Arcot	.. 690	
3.	South Arcot	.. ..	Rates according to routes.
4.	Bellary ..	.. 1,000	
5.	Chingleput ..	.. 1,500	
6.	Chittoor ..	.. 1,140	
7.	Coimbatore ..	.. 575	
8.	Cuddapah ..	.. 920	
9.	Ganjam ..	.. 2,300	
10.	East Godavari	.. 1,000	
11.	West Godavari	.. 1,822	
12.	Guntur ..	.. 2,000	
13.	South Kanara	.. 1,520	
14.	Kistna ..	.. 2,186	
15.	Kurnool ..	.. 960	
16.	Madura ..	.. 400	
17.	Malabar ..	.. 905	
18.	Nellore ..	.. 1,140	
19.	Nilgiris, The	.. 414	
20.	Ramnad ..	.. 1,020	
21.	Salem ..	.. 600	
22.	Tanjore ..	.. ..	Rates according to routes.
23.	Tinnevelly ..	.. 759	
24.	Trichinopoly	.. ..	Rates according to routes.
25.	Vizagapatam	.. 1,093	
	Average	.. 1,130	

* Vide Mitchell-Kirkness Report, Madras Section, p. 40.

APPENDIX B. 7.

SCHEDULE OF TAXES.

MAXIMUM QUARTERLY TAX.

Classes of Vehicles.	For vehicles fitted with pneumatic tyres.			For other vehicles.		
	RS.	A.	P.	RS.	A.	P.
3 Motor Lorries—						
(a) Lorries not exceeding 20 cwt. in weight laden	50	0	0	75	0	0
(b) Lorries exceeding 20 cwt. but not exceeding 30 cwt. in weight laden	100	0	0	150	0	0
(c) Lorries exceeding 30 cwt. but not exceeding 45 cwt. in weight laden	120	0	0	180	0	0
(d) Lorries exceeding 45 cwt. but not exceeding 60 cwt. in weight laden	150	0	0	225	0	0
(e) Lorries exceeding 60 cwt. but not exceeding 85 cwt.	180	0	0	270	0	0
(f) Lorries exceeding 85 cwt. but not exceeding 110 cwt.	220	0	0	330	0	0
(g) Lorries exceeding 110 cwt. but not exceeding 150 cwt.	270	0	0	405	0	0
(h) Lorries exceeding 150 cwt. but not exceeding 180 cwt. in weight ..	320	0	0	480	0	0
(i) Lorries exceeding 180 cwt. but in weight laden	350	0	0	525	0	0
(j) Additional tax payable in respect of lorries used for drawing trailers—						
(i) for each trailer not exceeding 20 cwt. in weight laden	20	0	0	30	0	0

SCHEDULE OF TAXES.

MAXIMUM QUARTERLY TAX.

Classes of Vehicles.	For vehicles fitted with pneumatic tyres.		For other vehicles.	
	RS.	A. P.	RS.	A. P.
(ii) for each trailer exceeding 20 cwt. but not exceeding 60	75	0 0	112	8 0
(iii) for each trailer exceeding 60 cwt in weight laden ..	150	0 0	225	0 0

Provided that two or more lorries shall not be chargeable under this clause in respect of the same trailer.

Motor vehicles plying for hire and used for the transport of passengers—

(a) Vehicles licensed under the rules made by the Provincial Government under the Indian Motor Vehicles Act, 1914 to carry in all not more than five persons ..	80	0 0	120	0 0
(b) Vehicles licenced under the rules made by the British Government under the Indian Motor Vehicles Act, 1914 to carry in all not more than five persons for every person which the vehicle is so licensed to carry excluding the driver and Conductor ..	20	0 0	30	0 0

Classes of Vehicles.	Maximum tax for vehicles fitted with pneumatic tyres.		Maximum tax for other vehicles.	
	For a period not exceed- ing 7 days.	For a period exceeding 30 days.	For a period not exceed- ing 7 days.	For a period ³ exceeding 7 days but not exceeding 30 days.
1.	2.	3.	4.	5.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
(a) Lorries not exceeding 20 cwt. in weight laden	8 8 0	25 0 0	12 8 0	37 8 0
(b) Lorries exceeding 20 cwt. but not exceed- ing 30 cwt. in weight laden ..	16 12 0	50 0 0	25 0 0	75 0 0
(c) Lorries exceeding 30 cwt. but not exceed- ing 45 cwt. in weight laden ..	20 0 0	60 0 0	30 0 0	90 0 0
(d) Lorries exceeding 45 cwt. but not exceed- ing 60 cwt in weight laden ..	25 0 0	75 0 0	37 8 0	112 8 0
(e) Lorries exceeding 60 cwt. but not exceed- ing 85 cwt. in weight laden ..	30 0 0	90 0 0	45 0 0	135 0 0
(f) Lorries exceeding 85 cwt. but not exceed- ing 110 cwt. in weight laden ..	36 12 0	110 0 0	55 0 0	165 0 0
(g) Lorries exceeding 110 cwt. but not exceeding 150 cwt. in weight laden ..	45 0 0	135 0 0	67 8 0	202 8 0
(h) Lorries exceeding 150 cwt. but not exceeding 180 cwt. in weight laden ..	53 8 0	160 0 0	80 0 0	240 0 0
(i) Lorries exceeding 180 cwt. in weight laden	58 8 0	175 0 0	87 8 0	262 8 0

Motor Lorries—

- (a) Lorries not exceeding 20 cwt. in weight laden
- (b) Lorries exceeding 20 cwt. but not exceed-
ing 30 cwt. in weight laden ..
- (c) Lorries exceeding 30 cwt. but not exceed-
ing 45 cwt. in weight laden ..
- (d) Lorries exceeding 45 cwt. but not exceed-
ing 60 cwt in weight laden ..
- (e) Lorries exceeding 60 cwt. but not exceed-
ing 85 cwt. in weight laden ..
- (f) Lorries exceeding 85 cwt. but not exceed-
ing 110 cwt. in weight laden ..
- (g) Lorries exceeding 110 cwt. but not
exceeding 150 cwt. in weight laden ..
- (h) Lorries exceeding 150 cwt. but not
exceeding 180 cwt. in weight laden ..
- (i) Lorries exceeding 180 cwt. in weight
laden

(j) Additional tax payable in respect of lorries used for drawing trailers—

- (i) for each trailer not exceeding 20 cwt. but not exceeding 60 cwt. in weight laden 12 8 0 37 8 0 18 12 0 56 4 0
- (ii) for each trailer not exceeding 20 cwt. in weight laden 3 8 0 10 0 0 5 0 0 15 0 0
- (iii) for each trailer exceeding 60 cwt in weight laden 25 0 0 75 0 0 37 8 0 112 8 0

Provided that two or more lorries shall not be chargeable under this clause in respect of the same trailer.

4. Motor vehicles plying for hire and used for the transport of passengers—

- (a) Vehicles licensed under the rules made under the Indian Motor Vehicles Act, 1914 to carry in all not more than 4 persons 13 0 0 40 0 0 20 0 0 80 0 0
- (b) Vehicles licensed under the rules made under the Indian Motor Vehicles Act, 1914 to carry more than 4 persons—
for every person which the vehicle is so licensed to carry 3 8 0 10 0 0 5 0 0 15 0 0

APPENDIX B. 8.

Mileage of Extra-Municipal Roads maintained by Public Authorities in British India as at 31st March 1938.

Province.	Total modern surface. a	Water-Bound macadam. b	Total surface macadam. (a+b)	unsurfaced (unmetalled or inferior type roads). c	Grand Total. (a+b+c) & (d+e)	Total. P.W.D. & M.E.S. d	Total Local Bodies. e
Madras	144	21,297	21,441	14,276	35,717	835	34,882
Bombay	596	10,538	11,134	8,437	19,571	7,083	12,488
Bengal	662	3,225	3,887	87,305	91,192	1,507	89,685
U. P.	1,263	6,937	8,200	23,389	31,589	4,024	27,565
Punjab	3,640	738	4,378	20,764	25,142	4,784	20,358
Bihar	534	3,482	4,016	31,144	35,160	1,016	34,144
C. P. & Berar	198	5,271	5,469	3,193	8,662	7,151	1,511
Assam	272	420	692	10,379	11,071	4,696	6,375
N. W. F. P.	884	193	1,077	2,844	3,921	2,367	1,554
Orissa	19	1,984	2,003	2,772	4,775	1,504	3,271
Sind	143	120	263	11,439	11,702	635	11,067
Total for Governors Provinces	8,355	54,205	62,560	2,15,942	2,78,502	35,602	2,42,900
Total British India.	9,103	54,967	64,070	2,21,243	2,85,313	40,473	2,44,840

Modern surface includes cement concrete, cement bound macadam, surface dressing with tar bitumen or asphalt, grouting sheet asphalt, asphaltic concrete, asphaltic macadam, tar concrete and tar macadam.

Water bound includes, broken rock metal, kankar, laterite or brick metal. M.E.S.: Military Engineering Service.

APPENDIX C. 1.

ABSTRACT OF REVENUE ACCOUNT FOR THE YEAR ENDING 32ND KARKADAKOM 1113.

Particulars of Working Expenses.		Amount.	Particulars of Receipts.		Amount.
		Rs. Ch. C.			Rs. Ch. C.
A. Administration, Management and Control ..	..	16,965 17 10	1 & 2. Passenger Fare and Luggage ..	..	3,51,444 14 7
B. Repairs, Renewals, Replacements and Maintenance ..	..	22,614 0 1	3. Parcel ..	..	2,874 0 4
C. Operating Expenses ..	..	1,90,340 24 8	4. Subsidy for the Transport of Postal Mails.	..	348 3 0
D. Pensionary Contribution of Permanent Employees from other departments working in this department ..	..	442 14 10	5. Miscellaneous ..	..	1,587 4 15
E. Contribution to the Insurance Reserve Fund ..	..	5,260 6 7			
F. Depreciation on rolling stock, Machinery and Tools, buildings, furniture etc. ..	..	46,447 0 0			
G. Interest on Capital ..	..	13,168 0 0			
Total Expenditure ..	..	2,95,238 7 4			
Net Profit ..	..	61,015 15 6			
Total ..	..	3,56,253 22 10	Total ..	..	3,56,253 22 10

APPENDIX C. 2.

STATEMENT SHOWING DETAILS OF SERVICE ON THE DATE OF COMMENCEMENT OF THE VARIOUS ROUTES.

No.	Route Name.	No. of buses allocated.	No. of journeys operated.	Average frequency of service.	Remarks.
1.	Trivandrum-Nagercoil	18	96	20 minutes.	..
2.	Trivandrum-Neyyatinkara	6	76	25 "	..
3.	Nagercoil-Colachel	6	80	25 "	..
4.	Nagercoil-Cape Comorin	5	120*	15 "	..
5.	Trivandrum-Nedumangad	4	64	20 and 40 minutes past each hour.	..
6.	East Fort-Sasthamangalam.	1	30	1 hour.	..
7.	Manakad Poojapurra	2	76	25 minutes.	..
8.	East Fort-Vallyathurai	1	18	{ At the School and Office timings and also in the evening at an interval of 1 hour.	..
9.	East Fort-Beach Sanku- mughom	1	12		..
10.	East Fort-Kattachakonam	3	90	20 minutes.	..
11.	Trivandrum Quilon	7	16	Roughly one hour.	..

* Includes shuttle service between Nagercoil and Suchindram also.

APPENDIX C. 3.

STATEMENT SHOWING DETAILS OF SERVICE ON THE LAST DAY OF KARKADAKOM 1113..

No.	Route Name.	No. of buses allocated.	No. of journeys operated.	Average frequency of service.	Remarks.
1.	Trivandrum-Nagercoil ..	19	98	20 minutes.	..
2.	Trivandrum-Neyyatinkara ..	5	70	30 "	..
3.	Nagercoil-Colachel ..	4	54	40 "	..
4.	Nagercoil-Cape Comorin ..	5	120	15 "	..
5.	Trivandrum-Nedumangad ..	2	32	1 hour.	..
6.	Trivandrum-Perurkada ..	1	30	1 "	..
7.	East Fort-Sasthamangalam.	2	60	30 minutes.	..
8.	East Fort-Poojappura ..	2	90	20 "	..
9.	East Fort-Valiyathura ..	1	8	{ At the School and Office timings and at an interval of one hour.	..
10.	East Fort-Beach Sankumughom ..	1	20		..
11.	East Fort-Pattom ..	2	60	30 minutes.	..
12.	Trivandrum-Quilon ..	7	16	Roughly one hour.	Date of operation: from 5-12-1113..

APPENDIX C. 4.

TRAFFIC ANALYSIS STATEMENT FOR THE YEAR 1113.

Sl. No.	Name of route.	Miles.	Passengers.	Receipts.		Parcel receipts.	Postal Mails & Anchal.		Advertisement and miscellaneous.	Remarks.
				Rs.	Ch. C.		Rs.	Ch. C.		
1.	Trivandrum-Nagercoil	7,29,586.7	7,38,377	2,21,636	16 12	2,588 26	8 348 3 0	..	Rs. Ch. C.	
2.	Trivandrum-Neyyattinkara.	1,17,122.5	1,97,375	20,664	5 0	..	..	..	..
3.	Nagercoil-Colachel.	1,45,192.2	2,36,246	25,415	24 7	57 21	0	..	..
4.	Nagercoil-Cape Comorin.	1,46,550.1	3,78,050	33,476	9 8	54 18	12	..	..
5.	East Fort-Nedumangad.	90,131.9	2,35,640	21,010	22 0	1 22	8	..	..
6.	East Fort-Sasthamangalam.	26,858.9	1,39,546	6,575	5 0	..	..	..	..
7.	East Fort-Poojappura.	28,839.8	1,43,275	6,263	17 0	..	..	..	..
8.	East Fort-Valiyathurai.	5,218.0	10,500	793	11 0	..	..	..	..
9.	East Fort-Beach.	10,830.0	35,943	2,037	10 0	..	..	..	..
10.	East Fort-Kattachakonam.	29,455.5	1,57,297	7,152	10 0	..	..	..	..
11.	Trivandrum-Quilon.	39,516.8	35,074	6,418	23 12	170 23	8	..	1,587 4 15	Date of beginning of service 5-12-1113.
Total ..		13,69,302.4	23,07,323	3,51,444	14 7	2,874 0 4	348 3 0	..	1,587 4 15	

Grand total Receipts—Rs. 3,56,253-22-10.

Trivandrum Town service operated from 22-8-1113.

APPENDIX C. 5.

Month.	Passenger fare and luggage.			Parcels.			Postal Mails.			Miscellaneous.			Total.		
	Rs.	Ch.	C.	Rs.	Ch.	C.	Rs.	Ch.	C.	Rs.	Ch.	C.	Rs.	Ch.	C.
Kumbhom (10th to 30th)	..	37,129	23	13	145	27	0	42	21	0	..	..	37,318	15	13
Meenom	..	58,647	23	8	415	18	12	61	2	0	78	2	59,202	18	14
Medom	..	67,185	24	10	408	21	8	61	2	0	49	8	67,705	0	8
Edavom	..	68,128	5	8	582	17	8	61	2	0	47	4	68,819	1	3
Mithunom	..	58,443	15	8	567	25	8	61	2	0	1,233	8	60,305	23	9
Karkadagom	..	61,909	5	8	753	2	0	61	2	0	179	9	62,902	18	11
Total Demand	..	3,51,444	14	7	2,874	0	4	348	3	0	1,587	4	3,56,253	22	10
Total collection	..	3,49,610	24	15	2,572	24	8	322	22	1	1,537	27	3,54,044	15	7
													2,209	7	3

The balance of Rs. 2,209-7-3 has been remitted only in 1114 and hence the difference in the totals of Demand and Collection.

APPENDIX C. 6.

*Statement showing the receipts under sale of
concession tickets in 1113.*

Route.	Month.								
	Edavom.			Mithunom.			Karkadagom.		
	Rs.	Ch.	C.	Rs.	Ch.	C.	Rs.	Ch.	C.
Trivandrum Town.	133	11	0	123	8	8	168	21	0
Trivandrum to Neyyattinkara ..	5	17	8	13	13	8	17	12	0
Nagercoil-Cape ..	9	18	0	8	1	0	10	20	0
Nagercoil-Colachel .	..	..	..	1	22	0	..	..	..
Trivandrum-Quilon.	..	..	..	..	..	..	3	16	0
Total ..	148	18	8	146	17	0	200	13	0
Grand Total—Rs. 495 20 8.									

APPENDIX C. 7.

Month-war Statement of Receipts under Private Hire.

Month.	No. of Services undertaken.		Amount.		
			Rs.	Ch.	C.
Kumbhom	1	28	0	0
Meenom	10	258	8	8
Medom	23	490	14	2
Edavom	15	366	6	8
Mithunom	16	324	10	8
Karkadagom	11	326	9	12
Total ..	76		1,793	21	6

APPENDIX C. 8.

*Statement showing details of Capital Expenditure
incurred during 1113.*

				Rs.	Ch.	C.
1.	Buildings	..	..	1,31,317	10	10
2.	Rolling Stock	..	..	4,12,389	0	15
3.	Plant and Machinery	..	..	17,741	16	11
4.	Preliminary Expenses	..	..	20,556	21	0
5.	Miscellaneous	..	..	4	24	4
6.	Share of tools and plant adjusted by P.W.D.	..	..	1,176	0	0
7.	Share of Establishment	..	..	19,903	0	0
Total ..				6,03,088	17	8

APPENDIX C. 9.

Working Expenses incurred during 1113.

1. *Administration, Management, and Control.*

Salaries.—

				Rs.	Ch.	C.
	Executive Staff	..	..	6,589	8	0
	Office Staff	..	..	2,489	3	8
	Depot Staff	..	..	1,480	14	7
	Audit Charges	..	..	622	14	0
	T. A. and other allowances	..	..	1,344	6	8
	Office Contingencies	..	..	1,540	19	4
Total ..				14,066	9	11

2. *Repairs, Renewals and Replacements:*
Buses, Lorries, etc.

				Rs.	Ch.	C.
Works Supervision (Garage Engineer)	..	..	..	500	0	0
Wages of Fitters, Painters, etc.	..			4,911	3	15
Materials and Spare Parts	..			20,049	5	8
Electric Power and Water Supply	..			2,714	2	6
Miscellaneous	..	..	..	2,395	21	0
Total ..				30,570	4	13

3. *Operating Expenses.*

Inspectors	..	..	..	3,625	4	4
Drivers	..	..	..	14,476	18	13
Conductors	..	..	..	11,757	0	10
Other Establishments	..	..	..	3,788	3	3
T. A. and other allowances	..			116	22	5
Diesel Oil	..	..	..	43,127	4	15
Other Oils and Greases	..	..	..	7,263	15	6
Kerosene Oil	..	..	..	196	7	1
Tyres	..	..	..	65,591	0	15
Cleaning Materials	..	..	..	53	24	15
Tickets	..	..	..	5,234	1	1
Stationery and Printing	..	..	..	2,446	0	7
Insurance of Buses	..	..	..	164	25	0
Uniforms and Equipment	..	..	..	3,309	2	5
Licence and Registration	..	..	..	976	0	0
Tolls	..	..	..	14,453	0	0
Telephone	..	..	..	585	7	8
Miscellaneous	..	..	..	5	22	0
Total ..				1,77,169	20	12

Grand Total of 1, 2 & 3 .. 2,21,806 7 4

APPENDIX C. 10.

Statement showing the strength of Staff on the last day of the year 1113.

Serial No.	Designation.	No. of Posts.	Scales of pay.
			Rs.
1.	Secretary	1	300
2.	Chief Accountant	1	100—125
3.	Clerks	5	40—5—70
4.	„	7	25—3—40
5.	„	4	20—1—25
6.	Typist	1	25—3—40
7.	Depot Clerks	2	40—5—70
8.	„	5	25—3—40
9.	„	1	20—1—25
10.	Ticket Clerks	4	15
11.	Auditors	1	<div>Account Office</div> <div>75—5—100</div> <div>40—5—70</div> <div>25—3—40</div>
12.	„	1	
13.	„	1	
14.	Garage Engineer	1	100—5—125
15.	Fitters	6	40—5—70
16.	„	6	30—2—40
17.	„	2	25—3—40
18.	„	13	20
19.	Fitter Coolies	10	13
20.	Cleaners	24	10
21.	District Inspectors	2	50—5—70
22.	Inspectors	28	40—2—50
23.	Driver Mechanics	3	40—5—70
24.	Drivers	115	30—2—40
25.	Conductors	119	25—1—30
26.	Parcel Clerks	81	10
27.	Peons	10	9—1|6—11

N.B.—Unless otherwise stated the increments are annual.

APPENDIX C. 11.

DETAILS OF EXPENDITURE UNDER ' A '.

Administration, Management and Control.

Detailed Heads of Account.				Amount.		
				Rs.	Ch.	C.
1.	Salaries of Executive Staff	..	..	7,907	4	0
2.	Office Staff	..	..	3,116	7	14
3.	Depot Staff	..	..	1,842	24	15
4.	Audit Charges	..	..	782	14	0
5.	T. A. and other Allowances	..	..	1,567	18	0
6.	Contingencies	..	..	1,749	4	13
Total				16,965	17	10

DETAILS OF EXPENDITURE UNDER ' B '.

Repairs, Renewals, etc.

Detailed Heads of Account.				Amount.		
				Rs.	Ch.	C.
1.	Works Supervision	..	..	600	0	0
2.	Wages of Fitters, Painters, etc.	..	..	6,134	11	13
3.	Materials and spare parts	..	..	10,662	26	11
4.	Electricity and Water Supply	..	..	1,795	12	9
5.	Miscellaneous	..	..	3,421	5	0
Total				22,614	0	1

DETAILS OF EXPENDITURE UNDER ' C '.

Operating Expenses.

Detailed Heads of Account.	Amount.		
	Rs.	Ch.	C.
Inspectors	4,810	4	4
Drivers	18,017	25	13
Conductors	14,619	2	5
Other Establishment	4,594	27	11
T. A. and other Allowances	116	22	5
Diesel Oil	36,620	14	12
Other Oils and Greases	6,214	26	0
Kerosene Oil	196	7	1
Tyres	77,588	19	3
Cleaning Materials	47	18	11
Tickets	3,061	9	7
Stationery and Printing	2,260	7	15
Insurances of Buses	164	25	0
Licence and Registration	976	0	0
Tolls	17,143	0	0
Miscellaneous	14	0	4
Telephone	585	7	8
Uniform and Equipment	3,309	2	5
<hr/>			
Total ..	1,90,340	24	8
<hr/>			

APPENDIX C. 12.

WORKING EXPENSES.

Particulars of Expenditure.	Expenditure booked in the Accounts of the year 1113 (both the cash and book adjustments.)		Add Expenditure as per details in the statement of liabilities.		Deduct amount as per details in the statement of assets.		Actual Working Expenses.	
	Rs.	Ch. C.	Rs.	Ch. C.	Rs.	Ch. C.	Rs.	Ch. C.
(A) Administration, Management and Control—								
Office Staff ..	6,589	8 0	1,317	24 0	..	..	7,907	4 0
Depot Staff ..	2,489	3 8	627	4 6	..	..	3,116	7 14
Audit Charges ..	1,480	14 7	362	10 8	..	..	1,842	24 15
T. A. and other Allowances ..	622	14 0	160	0 0	..	..	782	14 0
Contingencies ..	1,344	6 8	223	11 8	..	..	1,567	18 0
	1,540	19 4	221	10 12	12	25 3*	1,749	4 13
Total	14,066	9 11	2,912	5 2	12	25 3	16,965	17 10
(B) Repairs, Renewals, Replacement and Maintenance—								
Buses, Lorries etc. Works ..	500	0 0	100	0 0	..	..	600	0 0
Supervision ..	4,911	3 15	1,223	7 14	..	..	6,134	11 13
Wages of Fitters etc. ..	20,049	5 8	459	0 14	9,845	7 11†	10,662	26 11
Materials and spare parts ..	1,795	12 9	..	..	..	..	..	..
Electricity and Water Supply ..	3,314	10 13	106	22 3	..	..	..	..
Miscellaneous ..	30,570	4 13	1,889	2 15	9,845	7 11	22,614	0 1
Total	..	..	..	..	..	..	..	..

(C) Operating Expenses—

Inspectors	..	3,625	4	4	1,185	0	0	..	4,810	4	4		
Drivers	..	14,476	18	13	3,541	7	0	..	18,017	25	13		
Conductors	..	11,757	0	10	2,862	1	11	..	14,619	2	5		
Other Establishment	..	3,788	3	3	806	24	8	..	4,594	27	11		
T. A. and other allowances..	..	116	22	5	..	..	..	..	116	22	5		
Crude Oil	..	43,127	4	15	883	26	8	7,390	16	11	36,620	14	12
Other Oils and Greases	..	7,263	15	6	..	..	..	1,048	17	6	6,214	26	0
Kerosene Oil	..	196	7	1	..	..	..	..	196	7	1	..	..
Tyres	..	65,591	0	15	11,997	18	4	..	77,588	19	3	..	..
Cleaning Materials	..	53	24	15	..	..	..	6	6	4	47	18	11
Tickets	..	5,234	1	1	..	..	..	2,172	19	10	3,061	9	7
Stationery and Printing	..	2,446	0	7	..	..	..	185	20	8	2,260	7	15
Insurance of Buses	..	164	25	0	..	..	..	..	164	25	0	..	..
Licence and Registration	..	976	0	0	..	..	..	..	976	0	0	..	..
Tolls	..	14,453	0	0	2,690	0	0	..	17,143	0	0	..	..
Miscellaneous	..	5	22	0	8	6	4	..	14	0	4	..	..
Telephone	..	585	7	8	..	..	..	..	585	7	8	..	..
Uniform and Equipment	..	3,309	2	5	..	..	..	..	3,309	2	5	..	..
Total	..	1,77,169	20	12	23,975	0	3	10,803	24	7	1,90,340	24	8

* Value of Stamps on hand on 1-1-1114.

† Value of stock on hand.

APPENDIX C. 13.

Details for Depreciation.

	Rs.
1. On Buildings at 5 per cent	1,599
2. On Rolling Stock at 25 per cent	44,226
3. On Ticket machines at 20 per cent	470
4. On Other tools and plant at 15 per cent ..	130
5. On Furniture at 7½ per cent	22
	<hr/>
Total Rs. ..	46,447
	<hr/>

APPENDIX C. 14.

Details for Expenditure under Debt Heads Investment on Reproductive Works Commercial Transport for the year 1113.

	Rs.	Ch.	C.
Buildings*	1,31,317	10	10
Rolling Stock (a)	4,12,389	0	15
Plant and Machinery (a) ..	13,398	19	13
Preliminary expenses (b) ..	20,542	3	1
General Charges (b)	21,079	0	0
Miscellaneous (b)	4	24	14
	<hr/>		
Total ..	5,98,731	3	5
	<hr/>		

(a)* This shows the actual capital stock on hand.

(b) The expenditure on this is to be treated as payments for which there is no capital stock.

N.B.—Preliminary expenses refer to those expenses that were met with prior to the regular operation of the transport service.

APPENDIX C. 15.

*Statement of liabilities on account of payments to be made for value received during the year 1113.**

S. No.	To whom payable.	Amount.			Head of Debit.
		Rs.	Ch.	C.	
1.	Messrs. S. T. C. Thiruvadhinatha Pillai and Bros. ..	16	17	10	XXX-A. B.I.C.
2.	Kochan, Kittan, Charcoal Contractor ..	2	24	0	
3.	Cycle Emporium, Trivandrum ..	6	3	0	
4.	Natarajan Bros., Trivandrum ..	22	0	5	Materials and spare parts.
5.	Electric and Motor Works, Trivandrum ..	146	14	4	
6.	Petty Payments under office contingencies ..	221	10	12	Office contin. gencies.
7.	Mr. Kuncheriya, Kuncheriya, Alleppey ..	883	26	8	C 11 a. Crude Oil.
8.	Mr. K. M. S. Mallayan Chettiar ..	2,690	0	0	C 111 a. Tolls.
9.	Messrs. Ardeshir & Co. ..	11,997	18	4	Tyres.
Total ..		15,987	2	11	

* Payments for articles bought and consumed during the year under review but payable in the subsequent year.

APPENDIX C. 16.

Statement of Assets.

S. No.	Particulars.	Amount.		
		Rs.	Ch.	C.
1.	Value of stamps on hand on 32nd Karkadakom 1113 ..	12	25	3
2.	Value of stock of materials and spare parts on hand ..	9,845	7	11
3.	Value of Diesel Oil on hand ..	7,390	16	11
4.	Value of other oils, etc. ..	1,048	17	6
5.	Value of Cleaning Materials ..	6	6	4
6.	Value of Tickets ..	2,172	19	10
7.	Value of Stationery ..	185	20	8
Total ..		20,662	1	5

APPENDIX C. 17.

Statement of Liabilities on account of Salaries and

*Wages of Employees for work done.**

during the year 1113.

				Rs.	Ch.	C.
Executive Staff	..	..	..	1,317	24	0
Office Staff	..	..	..	627	4	6
Depot Staff	..	..	..	362	10	8
Audit Charges	..	..	..	160	0	0
T. A. and other Allowances	..	..	..	223	11	8
Pay of Foremen (Works Supervision).				100	0	0
Wages of Fitters, Painters etc.	..		..	1,223	7	14
Inspectors	..	..	..	1,185	0	0
Drivers	..	..	..	3,541	7	0
Conductors	..	..	..	2,862	1	11
Other Establishment	..	..	..	806	24	8
Pay of Menials for 1112|1113	..		..	99	16	10
Overtime allowance of the Mechanical Staff for 1112|1113	..	..	..	7	5	9
Overtime allowance of the Operating Staff for 1112|1113	..	..	..	8	6	4
Total				12,524	7	14

* These are payments due for work actually done in 1113 but paid during the subsequent year. Hence by adding these figures together with the corresponding figures in Appendix C. 9 the relevant figures for Appendix C. 11 are obtained.

APPENDIX C. 18.

DEBT HEADS INVESTMENTS ON REPRODUCTIVE WORKS.

Statement of Assets and Liabilities for the year ending 32nd Karkadagom 1113.

Liabilities.	Rs.	Ch. C.	Rs.	Ch. C.	Assets.	Rs.	Ch. C.	Rs.	Ch. C.
Byramshaw & Co. ..	..	..	5,034	3 11	Buildings ..	1,31,317	10 10		
Burmah-Shell Oil					Less depreciation ..	1,599	0 0		
Storage & Distributing Co. of India								1,29,718	10 10
Ltd., Madras ..	..	..	1,315	2 12	Rolling stock ..	4,17,423	4 10		
Capital ..	6,01,238	19 12	..	..	Less depreciation ..	44,226	0 0		
Less final payments								3,73,197	4 10
for which there is					Plant & Machinery ..	14,588	25 14		
no stock balance					Less depreciation ..	622	0 0		
<i>vide</i> Appendix								13,966	25 14
C. 19 ..	88,197	24 10	5,13,040	23 2	Amount due from				
					P.W.D. on account				
					of one Brown Bowry				
					Welding set and an				
					air compressor (tem-				
					porarily debited) to				
					this department ..			2,507	16 7
Total balance			5,19,390	1 9	Total (Closing			5,19,390	1 9
(Closing capital).	..	..			Capital) ..				

APPENDIX C. 19.

DETAILS FOR Rs. 88,197-24-10.

Expenditure to be treated as final payments for which there is no stock balance.

	Rs.	Ch.	C.	Rs.	Ch.	C.
1. Total Depreciation in Rolling Stock, Machinery and Tolls Buildings and Furniture ..				46,447	0	0*
2. (a) Preliminary Expenses ..	20,542	3	1			
(b) General Charges (Super- vision charges of P.W.D. and share of tools and plants) ..	21,079	0	0			
(c) Miscellaneous ..		4	24	14		
(d) Carriage and Freight (Cart hire, cooly, charges etc.).	124	24	11			
				<hr/>	41,750	24 10
Total ..				<hr/>	88,197	24 10

* Already included under expenditure and deducted from gross profits.

APPENDIX C. 20.

STATE TRANSPORT BUSES.

Total No. of buses and lorries registered.	No. checked.	No. of vehicles in respect of which irregularities were found.	Remarks.
85	59	31	In most of the vehicles the seating capacity has not been painted in the body of the vehicle. Several conductors refused to give information demanded by the police.

On the 1st April 1931 between 2 p.m. and 6 p.m. a surprise check of all vehicles was undertaken. Out of 5,562 motor vehicles 1,097 vehicles found on the road were checked. They were asked to test the Brakes and horns, overloading, painting of seating capacity, 'G' permits and conductors' pass books.

('G' permits mean general permits.)

No. of State Transport Buses registered on 1-4-1939 ..	85
No. of vehicles found irregular ..	31
No. with no seating capacity painted ..	21
Conductors refusing information ..	9

APPENDIX C. 21. MOTOR VEHICLES EXCLUDING STATE TRANSPORT BUSES.

Total No. of motor vehicles registered in the State.		Number checked.	No. of vehicles in respect of which irregularities were found.	Remarks.
Pleasure Cars—				
Private	3390	534	108	Several of the drivers had not their motor driving licences in possession. In a few cases 'G' permits were not found in possession.
Taxi	167	124	37	
Lorries—				
Private	532	131	50	The offences detected were generally over- loading and driving without licences. do.
Taxi	138	240	27	
Buses	412	265	60	Nil.
Motor Cycles	838	3	1	

By virtue of G.O. R.O.C. No. 981/38, dated 19-3-1938 conductors of State Transport Buses need not have pass books.

APPENDIX C. 22. *Annual Statement of Hackney Carriages registered and licences issued in the Town of Trivandrum for 1113.*

Year.	No. of carriages registered.	No. of drivers licensed.	Fee realised.	No. of cases charged.	Cases charged but not convicted.
			Rs. Ch. C.		
1112	206	197	327 14 0	..	..
1113	251	233	388 21 0	582	..

APPENDIX C. 23.

Accidents.

Year.	Total No. of accidents caused by motor vehicles.	No. that proved fatal.	No. resulting in injuries.	No. of persons injured.
1104	183	24	151	222
1105	150	28	105	205
1106	140	21	116	146
1107	84	18	53	75
1108	99	12	70	93
1109	91	12	66	72
1110	117	19	82	100
1111	83	11	57	72
1112	110	37	66	97
1113	114	22	82	99

APPENDIX C. 24.

List of Parcel Agencies as on 31-12-1113.

1. Trivandrum	12. Kottar
2. Balaramapuram	13. Kottaram
3. Aralumoodu	14. Cape Comorin
4. Neyyattinkara	15. Monday Market
5. Amaravila.	16. Colachal
6. Kalikavila	17. Trivandrum Cantonment
7. Marthandom	
8. Thoduvatty	18. Attingal
9. Thuckalai	19. Alencode
10. Vadassery	20. Quilon
11. Nagercoil	21. Nedumangad

Schedule of fares for Parcels.

Up to 28 lbs.—4 chs. on any single route.

Between 28 lbs. and 56 lbs.—8 chs. on any single route.

„ 56 lbs. and 112 lbs.—12 chs. on any single route.

Weights above 112 lbs. admitted only in special cases.

50% reduction for Newspaper bundles, flowers, leaves etc.

APPENDIX C. 25.

List of Bus routes and the number of privately owned buses running on each route for the year 1113

Serial No.	Name of route.	No bus runni
------------	----------------	--------------

Trivandrum District.

1.	Nagercoil—Trivandrum .. ..	..
2.	Nagercoil—Cape .. ..	..
3.	„ Colachal .. ..	..
4.	„ Azhaghiapandipuram .. ..	..
5.	„ Manavilakurichy .. ..	..
6.	„ Anjugramam .. ..	..
7.	„ Suchindram .. ..	..
8.	„ Ethamboly .. ..	..
9.	„ Manakudy .. ..	..
10.	„ Muttom .. ..	..
11.	„ Tinnevelly .. ..	..
12.	„ Shermadevi .. ..	..
13.	„ Aramboly .. ..	..
14.	Thuckalai—Eraniel via Eranielkonam ..	..
15.	„ Eraniel via Thiruvithamcode ..	..
16.	„ Kulasekharam .. ..	..
17.	„ Kulasekharam via Thiruvattar ..	..
18.	Colachal—Trivandrum .. ..	..
19.	Marthandom—Kulasekaram .. ..	..
20.	„ Monday Market .. ..	..
21.	Kulasekaram—Trivandrum .. ..	..
22.	Kuzhithura—Thengapattanam .. ..	..
23.	„ Arumana .. ..	..
24.	Nedumangad—Shencottah .. ..	..
25.	„ Palade .. ..	..
26.	„ Kallar .. ..	..
27.	„ Trivandrum via Kattakada ..	..
28.	Trivandrum—Kallar .. ..	..
29.	Kattakada—Poovar .. ..	..
30.	Neyyattinkara—Poovar .. ..	..
31.	Kattakada—Trivandrum .. ..	..
32.	Vizhinjam—Balaramapuram .. ..	..

Serial No.	Name of route.	No. of buses running.
33.	Attingal—Chirayinkil	2
34.	„ Killimanoor	2
35.	„ Madathurai	1
36.	Trivandrum—Vizhinjam	3
37.	„ Vamanapuram	1
38.	„ Kottarakara	9
39.	„ Thiruvella	2
40.	„ Shencottah (2 reserve bus) ..	4
41.	„ Kozhencherry	3
Total ..		249

* 27 new buses having current 'G' permits were not put on the road as the State Transport buses were to begin service on the route. Transport service came into existence on 10-7-1113/21-2-1938.

Quilon District.

1.	Kottarakara—Kottayam	20
2.	Punalur—Kayankulam	2
3.	Punalur—Mundakayam	2
4.	Shencottah—Sambooravadakara ..	1
5.	„ Shencottah Frontier	9
6.	Quilon—Alleppey	20
7.	„ Punalur	7
8.	„ Madathura	2
9.	„ Kulathupuzha	2
10.	„ Ranni	1
11.	„ Shencottah	8
12.	„ Kottayam	6
13.	„ Thiruvella	1
14.	„ Mavelikara	1
15.	Alleppey—Aroor	18
16.	„ Kozencherry	1
17.	„ Ambalapuzha	3

Serial No.	Name of route.			No. of buses running.
18.	Chengannur—Konni	..	..	4
19.	„ Vadaserikara	..	..	1
20.	„ Kayankulam	..	..	2
21.	Ranni—Thiruvilla	..	..	1
22.	„ Thattarambalam	..	..	2
23.	Pathanamthitta—Kottayam	..	..	1
24.	Kozhencherry—Changanacherry	..	..	6
25.	Thiruvilla—Kottayam	..	..	1
26.	Haripad—Kottayam	..	..	1
27.	Thiruvilla—Bonami	..	..	1
Total				124

Kottayam District.

1.	Kottayam—Changanacherry	..	..	7
2.	„ Alwaye	..	..	29
3.	„ Thodupuzha	..	..	2
4.	„ Devicolam	..	..	2
5.	„ Poonjar	..	..	2
6.	„ Erattupettah	..	..	19
7.	„ Vaikom	..	..	1
8.	„ Athirampuzha	..	..	2
9.	„ Kothala	..	..	2
10.	„ Mundakayam	..	..	7
11.	„ Kumili	..	..	4
12.	„ Bonami	..	..	4
13.	„ Mallapally	..	..	2
14.	„ Ranni	..	..	1
15.	Bonami—Kumili	..	..	1
16.	Mundakayam—Kumili	..	..	2
17.	Ettumanoor—Vaikom	..	..	3
18.	Vaikom—Thodupuzha	..	..	2
19.	„ Palai	..	..	2
20.	„ Ernakulam	..	..	2
21.	„ Alwaye	..	..	2

Serial No.	Name of route.	No. of buses running.
22.	Palai—Thodupuzha	4
23.	„ Pappathipara	1
24.	„ Piravam	1
25.	„ Kuthattukulam	1
26.	Chenganacherry—Manimala	3
27.	„ Mundakayam	3
28.	„ Ranni	1
29.	Ponkunnam—Palai	2
30.	„ Erattupettah	2
31.	„ Erumalai	1
32.	Alwaye—Edapalle	5
33.	„ Parur	6
34.	„ Munnar	2
35.	Edapalle—Karukutty	5
36.	„ Pallupettah	1
37.	Parur—Varapuzha	2
38.	Kothamangalam—Mamala	1
39.	„ Muvattupuzha	2
40.	„ Piravom	1
41.	Munnar—Chinnar	2
42.	„ Periyakanal	2
43.	„ Top Station	2
44.	Muvattupuzha—Thodupuzha	3
45.	„ Piravom	1
46.	Thodupuzha—Mamala	2
47.	„ Karimanoor	1
48.	„ Kanjar	1
49.	Palai—Kuthattukulam	1
50.	Kuthattukulam—Pappathippara	1
Total ..		158

APPENDIX C. 26.

List of Companies and Important Services.

1. The Pioneer Motor Service, Nagercoil.
2. The Tinnevely Motor Bus Company, Tinnevely.
3. Royal Mail Service, Nagercoil.
4. Nagoor Andavar Motor Service, Tinnevely.
5. Hameedia Motor Service, Nagercoil.
6. Rama Vilas Motor Service, Kalakad.
7. Gomathi Motor Service, Kalakad.
8. The Syndicate Ltd., Nagercoil.
9. M. V. Motor Service, Trivandrum.
10. Ganapathy Motor Service, Kalakad.
11. Diamond Motor Service, Trivandrum.
12. New Champion Motor Service, Trivandrum.
13. Nagaraj Motor Service, Trivandrum.
14. Kerala Motor Service, Trivandrum.
15. Kamala Motor Service, Attingal.
16. Shree Krishna Motor Service, Attingal.
17. Raja Ram Motor Service, Attingal.
18. Manoharan Motor Service, Trivandrum.
19. St. George Motor Service, Thiruvilla.
20. Express Motor Service, Thiruvella.
21. Trivandrum-Kottarakara Joint Motor Service,
Kottarakara.
22. Sri Ram Motor Service, Trivandrum.
23. Nelson Motor Service, Chengannur.
24. Balagopalan Motor Service, Kottarakara.
25. Quilon—Punalur Motor Transport Union Ltd.,
Kottarakara.
26. The Popular Motor Service, Quilon.
27. The Alleppey Syndicate Motors Ltd., Alleppey.

28. The Automobile Corporation Ltd., Mavelikara.
29. The Ambalapuzha Syndicate Motors, Ambalapuzha.
30. West Coast Syndicate Motors Ltd., Alleppey.
31. Chengannur-Konni Motor Union Ltd., Chengannur.
32. Kottayam-Changanacherry Motor Union Ltd., Changanacherry.
33. Grade Motor Service, Adoor.
34. Kottayam-Alwaye Motor Union Ltd., Kottayam.
35. Sri Karunnya Vilasom Motor Union Ltd., Kottayam.
36. The Associated Motor Union Ltd., Palai.
37. The Pankajam Motor Service, Alwaye.
38. Kozhencherry — Changanacherry Motor Syndicate Ltd., Changanacherry.
39. Peoples Motor Union Ltd., Palai.
40. Kohinoor Motor Service, Changanacherry.
41. Ramakrishna Vilas Motor Service, Ponkunnam.
42. P. S. Sarasvathi Motor Service, Madura.
43. Gomathi Vilas Motor Service, Madura.
44. United Motor Union Ltd., Palai.
45. Master Motor Union Ltd., Piravom.
46. Standard Motor Union Ltd., Ettumanoor.
47. Auto Transport Union Ltd., Alwaye.
48. Changanacherry — Manimala Motor Union & Co., Changanacherry.
49. North Travancore Motor Union Ltd., Parur.
50. Lucky Motor Service, Munnar.
51. Thodupuzha-Muvattupuzha Motor Union Ltd., Thodupuzha.
52. High Range Motor Union Ltd., Kottayam.
53. Hill Land Motor Union Ltd., Kottayam.

APPENDIX C. 27.

DETAILS OF SERVICE NEEDS SUGGESTED BY THE TRAVANCORE BUS-OWNERS' CONFERENCE.

Route.				Seating capacity.	No. of buses required.	Spare buses.	No. of trips.
Nagercoil-Manavalakurichy	..			10	4	..	4
Kottarakara-Kottayam	..			23	(12) 20	4	1
Trivandrum-Quilon	..	..		23	12	6	..
Quilon-Punalur	..	..		23	(4) plus 1	..	..
Quilon-Kottayam	..	..		23	6	1	..
Quilon-Alleppey	..	..		16	(16) 20	(4) 2	..
Alleppey-Aroor	..	..		9	18	2	..
Chengannur-Kayankulam	..			13	6	..	..
Changanacherry-Kozhencherry.				9	8	2	..
Chengannur-Konni	..	..		13	6	..	..
Changanacherry-Kottayam	..			23	6	1	..
Thiruvella-Bonami Service not necessary—							
Kottayam-Kumili	..	..		23	4	5	..
„ Bonami	..	..		23	3		
„ Mundakayam	..			23	4		
Ponkunnam-Palai	..	..		15	5	..	..
Kottayam-Erattupettah	..			23	8	..	..
„ Alwaye	..	..		23	8	..	..
Alwaye-Edapalle	..	..		20	6	..	..
„ Parur	..	..		20	8	..	..
Edapalle-Karukutty (including Trichur service)	..			20	5	..	..

APPENDIX

A Comparative Statement showing the number of Buses of the number of Accidents

Year.	Total No. of buses.	Total miles run by all buses per day.	Total per year.	Total No. of accidents during the year (deaths or serious injuries).	Average number of miles for every accident.	No. of accidents due to inefficiency of the staff.
1929	50*	7,500	27,37,500	28	97,768	12
1930	60*	9,300	33,94,500	31	1,09,500	9
1931	70*	10,500	38,32,500	14	2,73,750	6
1932	80*	12,000	43,80,000	11	3,98,182	5
1933	110*	16,500	59,20,500	13	4,55,423	7
1934	120*	18,000	65,70,000	6	10,95,000	2
1935	140*	21,000	76,65,000	8	9,58,125	3
1936	170*	25,000	93,07,500	7	13,29,643	1

* Including V. M. S. and Allied Groups.

D. 3.

U. M. S. and all allied Transport Group, the daily mileage run, and other particulars.

Average No. of miles for every accident, 'due to inefficient staff.	Other causes such as bad road and mechanical defects.	Average No. of miles for every accident due to bad roads & mechanical defects.	No. of accidents due to carelessness of passengers and other traffic.	No. of drivers dismissed.	Total No. of claim or punishments through court.	Drivers dismissed for rash driving from 1930-31 as per Cir. No. 1031/21st March 1931.	Claim ordered by Court.
2,28,125	5	5,47,500	11	6	4	..	..
3,77,167	7	4,84,929	15	8	3	7	1 case of 1930
6,38,750	2	19,16,250	6	14	1	5	
8,76,000	2	21,90,000	4	10	1	6	..
8,45,786	1	59,20,500	5	13	..	12	..
32,85,000	..	..	4	6	2	9	..
25,55,000	..	..	5	7	2	10	..
93,07,500	1	93,07,500	6	7	1	8	1

APPENDIX D. 1.

GROWTH OF THE U. M. S.

1921	..	Started with one bus.	
1924	..	8 buses.	
1928	..	38	„
1929	..	70	„ Registered as a limited liability concern.
1931	..	120	„
1933	..	156	„
1937	..	162	„
1938	..	167	„
1939	..	140	„ The fall in 1939 is due to famine conditions.

APPENDIX D. 2.

POSTAL CONTRACT RATES.

Previous Contract.	Section.	Miles.	Present Contract.
Rs.			Rs.
550	R.M.S. Contractors between Erode R.M.S. and D.P.M.	56	550
350	Erode-Satyamangalam ..	48	122
50	Tiruppur-Palladam ..	10	10
50	Tiruppur-Avanashi ..	8	10
..	Avanashi-Annur ..	15	20
..	Keeranur-Palani ..	15	20
225	Trichur-Kohinjampara ..	40	25
..	Palghat-Kollengode ..	16	10

APPENDIX D. 4.

*Routes, number of trips, mileage and buses plied
by the U. M. S. on various sections.*

No. of Buses.	Routes.	Trips.	Miles.
6	Coimbatore-Dharapuram	.. 6 R. T.	102
5	„ Udamalpet	.. 5	112
3	„ Kangayam	.. 4	90
4	„ Palladam <i>via</i> Pappampatti	.. 2	60
5	„ Palghat	.. 10	66
4	„ Tattamangalam (Cochin Frontier)	.. 6	70
5	„ Mettupalayam	.. 12	45
3	„ Alandurai	.. 9	30
1	„ Thadagam	.. 5	20
12	„ Satyamangalam	.. 16½	90
10	„ Erode	.. 10	132
1	„ Bhavani	.. 1	140
8	„ Gobichettipalayam	.. 8	112
1	Satyamangalam-Andiyur	.. 2	56
1	„ Tiruppur <i>via</i> Gobi.	1	86
1	Erode-Dharapuram <i>via</i> Palayakottai	.. 1	120
6	„ Dharapuram <i>via</i> Chennimalai.	5	112
2	„ Dharapuram <i>via</i> Vellaikoil	.. 2	140
4	„ Satyamangalam	.. 4	90
1	„ Dharapuram Sankaranda- palayam	.. 1	120
3	„ Mettupalayam	.. 3	132
1	Dharapuram-Kodimudi	.. 1	100
2	„ Dindigul	.. 3	90
6	„ Palni	.. 10	48
1	Dharapuram-Udamalpet <i>via</i> Tungavi	.. 2	54
3	„ <i>via</i> Madattukulam	.. 6	56
1	„ Gobichettipalayam	.. 1	120

No. of Buses.	Routes.		Trips.	Miles.
2	Tiruppur-Satyamangalam	..	2	90
6	„ Mettupalayam <i>via</i> Avanashi	..	8	66
1	„ <i>via</i> Pettikottai	..	1	100
1	„ Gobi <i>via</i> Avanashi	..	2	80
1	„ Gobi <i>via</i> Kunnathur	..	2	60
7	„ Pollachi	..	10	80
2	„ Dharapuram	..	4	60
2	Dharapuram-Pollachi <i>via</i> Ponnapuram	..	3	80
2	Pollachi-Trichur	..	2	120
2	„ Vadathancheri	..	2	80
1	Palghat <i>via</i> Para	..	2	60
3	Pollachi-Palghat <i>via</i> Chittur	..	6	70
1	Palghat-Pattancheri	..	3	30
2	Trichur-Kohinjampara	..	2	80
1	Chittur-Pulthur	..	5	20
1	Palghat-Para	..	5	18
2	„ Ayalur	..	4	40
4	„ Kollengode <i>via</i> Peruvambu.		3	30
2	„ „ <i>via</i> Koduvayur.		6	36
2	Gobichettipalayam-Andiyur	..	8	30

APPENDIX D. 5.

Booking Clerk Staff at Branches.

1.	Dharapuram-Udamalpet at Coimbatore	..	3
2.	Palghat Stand at Coimbatore	.. ..	3
3.	Tiruppur Stand at Tiruppur	.. ..	7
4.	Palghat Stand	.. ..	4
5.	Pollachi	.. ..	8
6.	Dharapuram	.. ..	9
7.	Erode Bus Stand at Coimbatore	.. ..	8
8.	Palladam	.. ..	2
9.	Satyamangalam Stand at Coimbatore	..	10
10.	Erode Proper	.. ..	4

APPENDIX D. 6.

Accident Figures for the period of 14th July 1937 to 31st July 1939.

Death	.. ..	13
Serious Fracture but not death	.. ..	11
Ordinary fracture to life	.. ..	30
Ordinary injuries to life	.. ..	20
Serious damage to bus	.. ..	2
Ordinary damage to bus	.. ..	1
Scratches to buses	.. ..	5
Damage to other properties or animals	..	5
Our Office suspension	.. ..	36
Our Office dismissal	.. ..	7
Our Office re-instated by General Manager	..	30
Number of Police prosecutions from 1-10-38		
to 31-12-38	.. ..	14 cases
Out of these 14 number of cases acquitted	..	2
Total amount of court fines 1-10-38 to		
31-12-38	.. ..	Rs. 365
Number of cases from 1-1-39 to 31-7-39	..	60
Number of cases acquitted	.. ..	13
Number of cases withdrawn	.. ..	4
Total fines paid	.. ..	Rs. 350

APPENDIX D. 7.

Strength of Staff.

No.	Incumbency.	Scales of Pay.
162	Drivers ..	20—50
161	Conductor ..	10—20
75	Booking clerks ..	20—50
11	Assistant Managers .	50—80
2	Managers ..	80—100
1	General Manager ..	350
1	Managing Agent ..	500
100	Workshop Staff.	
60	Office Staff ..	including spare parts Department.

The whole staff is divided into 11 branches each under the jurisdiction of an assistant manager.

	Number
Head Office Clerical Staff	20
Peons and Watchmen	29
Cleaners—Washing and Greasing Department ..	8
Petrol Pump Staff	5
Checking Inspectors	18
Head Office Workshop	40
Peelamedu Workshop	29
Daily Wages Staff	80
A.E.G. Staff (Electrical Company)	8

APPENDIX D. 9.

Line Dharapuram to Dindigul. Bus M.L. 1693. Date
 Driver. Uchappan. Conductor. Sheik Abdul. Month July 1939.

Date.	Miles.	Petrol Oil Gls.	Petrol.	Oil and Grease.	Spare Parts.	Batta.	Other Expenses.	Total Expenses.	Total Collection.	Debit or- Credit.
			RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
3-7-1939	90	6	8 7 0	0 8 6	..	0 9 0	..	9 8 6	22 8 6	13 0 0
4-7-1939	180	12	16 14 0	1 5 3	1 4 0	1 13 0	..	21 4 3	55 11 3	31 11 0
5-7-1939	90	6	8 7 0	1 5 3	1 5 0	0 10 6	..	11 11 9	21 13 9	9 8 0
6-7-1939	180	12	16 14 0	0 8 6	1 12 0	1 7 0	..	20 9 6	41 8 0	20 14 6
7-7-1939	90	6	8 7 0	0 4 3	..	0 9 0	..	9 4 0	17 8 9	8 4 9
8-7-1939	180	12	16 14 0	1 10 9	..	1 12 6	..	20 5 3	50 8 3	30 3 0
9-7-1939	90	6	8 7 0	0 8 6	..	0 11 6	..	9 11 0	24 15 0	15 4 9
10-7-1939	180	12	16 14 0	0 8 6	..	1 3 6	..	18 10 0	36 2 0	17 8 0
11-7-1939	90	6	8 7 0	0 8 6	..	1 3 0	..	10 2 6	36 4 0	26 2 0
12-7-1939	180	12	16 14 0	0 12 9	0 2 0	1 3 0	..	18 15 9	30 10 0	11 10 3
13-7-1939	90	6	8 7 0	0 8 6	..	0 10 0	..	9 9 6	22 4 3	12 10 9
14-7-1939	180	12	16 14 0	0 15 0	27 0 0	1 9 0	..	46 6 0	40 1 6	—6 4 6
15-7-1939	90	6	8 7 0	0 8 6	..	0 11 0	..	9 10 6	27 13 3	18 2 9
16-7-1939	180	13	18 4 6	1 1 3	..	1 6 0	..	20 11 9	36 4 3	15 8 6
17-7-1939	90	6	8 7 0	0 8 6	..	0 7 0	..	9 6 6	16 13 3	7 6 9
18-7-1939	180	12	16 14 0	0 4 3	..	1 7 0	..	18 9 3	43 9 0	24 15 9
19-7-1939	..	..	..	2 10 6	..	..	..	2 10 6	..	2 10 6
20-7-1939	174	14	19 9 0	..	..	1 6 6	..	20 15 6	38 6 0	17 6 6
21-7-1939	174	11	15 7 6	0 8 6	..	0 5 0	..	16 5 0	10 11 9	5 9 3
22-7-1939	180	4	1 5 10 0	1 1 0	..	0 12 6	..	7 7 6	24 14 0	17 6 6
23-7-1939	176	10	1 14 1 0	1 1 0	7 0 0	0 9 0	..	22 11 0	17 15 6	1 11 6

APPENDIX
Dharapuram to

Date.	Serial No.	Total miles run.	Memo Collections.			Way Collections.			Total Collections.			Total Expenses.		
			RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
3-7-1939	..	90	12	4	0	10	4	6	22	8	6	9	8	6
4-7-1939	..	180	36	4	9	16	10	6	52	15	3	21	4	3
5-7-1939	..	90	14	9	3	6	10	6	21	3	9	11	11	9
6-7-1939	..	180	29	5	0	12	3	0	41	8	0	20	9	6
7-7-1939	..	90	11	14	0	5	10	9	17	9	0	9	4	3
8-7-1939	..	180	36	0	0	14	8	3	50	8	3	20	5	3
9-7-1939	..	90	15	6	3	9	9	6	24	15	9	9	11	0
10-7-1939	..	180	19	5	3	16	12	9	36	2	0	18	10	0
11-7-1939	..	90	31	12	0	4	8	6	36	4	6	10	2	6
12-7-1939	..	180	24	2	0	6	8	0	30	10	0	18	15	9
13-7-1939	..	90	16	14	9	5	5	6	22	4	3	9	9	6
14-7-1939	..	180	30	8	0	9	9	6	40	1	6	46	6	0
15-7-1939	..	90	15	2	3	12	11	0	27	13	3	9	10	6
16-7-1939	..	180	19	9	3	16	11	0	36	4	3	20	11	9
17-7-1939	..	90	9	10	9	7	2	6	16	13	6	9	6	6
18-7-1939	..	180	29	2	3	14	6	9	43	9	0	18	9	3
19-7-1939	2	10	6
20-7-1939	..	174	24	7	9	13	4	3	38	6	0	21	1	6
21-7-1939	..	174	6	9	6	4	2	3	10	11	9	16	5	0
22-7-1939	..	180	8	6	9	16	7	3	24	14	0	7	7	6
23-7-1939	..	176	14	14	9	3	0	9	17	15	6	22	11	0

Line Dharapuram to Dindigul. Bus M.L. 1693.

Driver Uchappan.

Conductor Sheikh Abdul.

D. 8.

Dindigul—45 miles.

Credit.	Debit.	For 21 seater, Debit or Credit.	No. of days bus went on line.	'Driver'	No. of days present.	Conductor	No. of days present. Standard Number of seats.
RS. A. P.							
13 0 0	..	..	1	Uchappan	1	Sheik Abdul	1 21
31 11 0	..	..	1		1		1 21
9 8 0	..	..	1		1		1 21
20 14 6	..	..	1		1		1 21
8 4 9	..	..	1		1		1 21
30 3 0	..	..	1		1		1 21
15 4 9	..	..	1		1		1 21
17 8 0	..	..	1		1	Allaudin	1 21
26 2 0	..	..	1		1		1 21
11 10 3	..	..	1		1		1 21
12 10 9	..	..	1		1	Sheik Abdul	1 21
..	6 4 6	D.	1		1		1 21
18 2 9	..	..	1		1		1 21
15 8 6	..	..	1		1		1 21
7 6 9	..	..	1		1		1 21
24 15 9	..	..	1		1		1 21
..	2 10 6	D.	1		1		1 21
17 4 6	..	..	1		1		1 21
..	5 9 3	D.	1		1		1 21
17 6 6	..	..	1		1		1 21
..	4 11 6	D.	1		1		1 21

Date

Month, July 1939.

APPENDIX D. 10.

Bin-Card for M.L. 1692 for November 1937.

Month Date Bus Driver Conductor. Line.	Serial No.	Total Miles run.	Memo Collections.	Way Collections.	Total Collections.	Total Expenses.	Credit.
			RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
November	1	128	35 15 0	5 14 0	41 13 0	13 10 6	28 2 6
"	3	128	31 0 0	9 0 0	40 0 0	13 10 6	26 5 6
"	4	128	24 13 0	10 0 0	34 13 0	12 9 0	22 4 0
"	5	128	25 0 0	9 10 0	34 10 0	13 5 0	21 5 0
"	6	128	26 0 0	13 5 0	39 5 0	14 14 6	24 6 6
"	7	128	31 14 0	11 11 0	43 9 0	13 0 0	30 9 0
"	8	128	40 10 0	4 9 0	45 3 0	15 7 0	29 12 0
Total		896	215 4 0	64 1 0	279 5 0	96 8 6	182 12 6
"	9	128	27 6 0	12 14 0	40 4 0	13 9 0	26 11 0
"	10	128	32 7 0	11 3 0	43 10 0	13 11 0	29 15 0
"	11	128	28 8 0	12 10 0	41 12 0	17 1 6	24 0 6
"	12	128	36 5 0	10 9 0	46 14 0	13 14 0	33 0 0
"	13	128	27 13 0	10 6 0	38 3 0	12 1 0	26 2 0
"	14	128	30 10 0	12 2 0	42 12 0	12 15 0	29 13 0
"	15	128	34 0 0	13 3 0	47 3 0	15 3 3	31 15 9
"	16	128	34 9 0	8 8 0	43 1 0	13 9 9	29 7 3
Total		1,024	251 10 0	91 7 0	343 1 0	112 0 6	231 0 6
							0 3 7*

APPENDIX D. 11.

17	128	25 7 0	8 12 0	34 3 0	26 8 0	7 11 0	..
"	128	27 5 0	11 2 0	38 7 0	13 6 3	25 0 9	..
"	128	18 11 0	13 15 0	32 10 0	14 9 3	18 0 9	..
"	128	28 13 0	9 5 0	38 2 0	12 11 6	25 6 6	..
"	128	25 4 0	9 15 0	35 3 0	12 9 0	22 10 0	..
"	128	21 8 0	17 9 0	39 1 0	13 6 9	25 10 3	..
"	128	28 6 0	10 8 0	38 14 0	13 6 9	25 7 3	..
"	128	24 8 0	13 0 0	37 8 0	14 12 9	22 11 3	0 2 8*
Total	1,024	199 14 0	94 2 0	294 0 0	121 6 3	172 9 9	..
25	128	20 10 0	11 11 0	32 5 0	12 7 0	19 14 0	..
26	128	20 12 0	9 10 0	30 6 0	14 6 9	15 15 3	..
27	128	17 7 0	13 15 0	31 6 0	13 1 9	18 14 3	..
28	128	23 10 0	9 1 0	32 11 0	12 8 0	20 3 0	..
29	128	27 12 0	10 6 0	38 2 0	12 11 6	25 6 6	..
30	128	24 8 0	13 10 0	38 2 0	11 5 0	26 13 0	0 2 8*
Total	768	134 11 0	68 5 0	203 0 0	76 8 0	126 8 0	..

Line

Bus M.L. 1692

Date

Driver

Conductor

Month November 1937.

* Net credit per mile.

APPENDIX D. 12.

Bin-Card for M.L. 1692 showing details of receipts and running expenses.

Line.	Driver.	Date.	Miles.	Petrol gls.	Oil gls.	Petrol	Conductor	Oil and Grease.	Tyres and Tubes.	Spare Parts.	Batta.	Other Expenses.	Total Expenses.
						RS. A. P.		RS. A. P.		RS. A. P.			RS. A. P.
November		1	128	8	1	11 4 0		0 12 0	..	..	1 10 6	..	13 10 6
"		3	128	8	1	11 4 0		0 12 0	..	0 1 6	1 9 0	..	13 10 6
"		4	128	8	..	11 4 0		..	..	..	1 5 0	..	12 9 0
"		5	128	8	1	11 4 0		0 12 0	..	..	1 5 0	..	13 5 0
"		6	128	9	1	12 10 6		0 12 0	..	..	1 8 0	..	14 14 6
"		7	128	8	..	11 4 0		..	..	..	1 12 0	..	13 0 0
"		8	128	8	1	11 4 0		0 12 0	..	1 10 0	1 13 0	..	15 7 0
Total ..			896	57	11	80 2 6		3 12 0	..	1 11 6	10 14 6	..	96 8 6
"		9	128	8	1	11 4 0		0 12 0	..	..	1 9 0	..	13 9 0
"		10	128	8	1	11 4 0		0 12 0	..	..	1 11 0	..	13 11 0
"		11	128	11	..	15 7 6		..	..	..	1 10 0	..	17 1 6
"		12	128	8	1	11 4 0		0 12 0	..	..	1 14 0	..	13 14 0
"		13	128	7	1	9 13 6		0 12 0	..	..	1 7 6	..	12 1 0
"		14	128	8	..	11 4 0		..	..	..	1 11 0	..	12 15 0
"		15	128	9	1	12 10 6		0 10 9	..	..	1 14 0	..	15 3 3
"		16	128	8	1	11 4 0		0 10 9	..	..	1 11 0	..	13 9 9
Total ..			1024	67	11	94 3 6		4 5 6	..	..	13 7 6	..	112 0 6

APPENDIX D. 13.

"	17	128	9	..	12 10 6	..	..	12 9 0	1 4 6	..	26 8 0
"	18	128	8	‡	11 4 0	0 10 9	..	..	1 7 6	..	13 6 3
"	19	128	9	‡	12 10 6	0 10 9	..	..	1 4 0	..	14 9 3
"	20	128	8	..	11 4 0	..	..	..	1 7 6	..	12 11 6
"	21	128	8	..	11 4 0	..	..	..	1 5 0	..	12 9 0
"	22	128	8	‡	11 4 0	0 10 9	..	..	1 8 0	..	13 6 9
"	23	128	8	‡	11 4 0	0 10 9	..	..	1 8 0	..	13 6 9
"	24	128	9	‡	12 10 6	0 10 9	..	..	1 7 6	..	14 12 9
"	Total ..	1024	67	1‡	94 3 6	3 5 9	..	12 9 0	11 4 0	..	121 6 3
"	25	128	8	..	11 4 0	..	..	..	1 3 0	..	12 7 0
"	26	128	9	‡	12 10 6	0 10 9	..	..	1 1 6	..	14 6 9
"	27	128	8	‡	11 4 0	0 10 9	..	..	1 3 0	..	13 1 9
"	28	128	8	..	11 4 0	..	..	..	1 4 0	..	12 8 0
"	29	128	8	..	11 4 0	..	..	..	1 7 6	..	12 11 6
"	30	128	7	..	9 13 6	..	..	..	1 7 6	..	11 5 0
"	Total ..	768	48	‡	67 8 0	1 5 6	..	..	7 10 6	..	76 8 0

APPENDIX D. 14.

M. L. 1692.

Weekly statements showing details of receipts and running expenses for November 1937.

Week.	Petrol.	Oil.	Petrol.	Oil.	Tyres and Tubes.	Bus.		Spares.	Driver.		Batta.	Conductor.		Total Expenses.	Total Expenses.
						RS.	A. P.		RS.	A. P.		RS.	A. P.		
1	57	1½	80	2 6	..	3	12 0	1	11 6	..	10	14 6	..	96	8 6
2	67	1½	94	3 6	..	4	5 6	..	..	..	13	7 6	..	112	0 6
3	67	1½	94	3 6	..	3	5 9	12	9 0	..	11	4 0	..	121	6 3
4	48	½	67	8 0	..	1	5 6	..	..	..	7	10 6	..	76	8 0
Total.	239	4½	336	1 6	..	12	12 9	14	4 6	..	43	4 6	..	406	7 3

APPENDIX D. 15.

M. L. 1692.

Week.	Miles.	Memo Collection.	Way Collection.		Total Collection.		Total Expenses.		Credit.		Debit.	
			RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.
1	896	215 4 0	64	1 0	279	5 0	96	8 6	182	12 6	..	..
2	1024	251 10 0	91	7 0	343	1 0	112	0 6	231	0 6	..	..
3	1024	199 14 0	94	2 0	294	0 0	121	6 3	172	9 9	..	..
4	768	134 11 0	68	5 0	203	0 0	76	8 0	126	8 0	..	..
Total.	3712	801 7 0	317	15 0	1,119	6 0	406	7 3	712	14 9	0 3	1*

Conductor.

Driver.

Bus.

* Net credit per mile.

APPENDIX D. 16.

Line-war statement of receipts and working expenses for November 1937.

POLLACHI LINE.

Week.	Petrol.	Oil.	Petrol.	Oil.		Tyres and Tubes.		Spares.		Driver.		Conductor.	
				RS.	A. P.	RS.	A. P.	RS.	A. P.	Bus.	Batta.	Other Expenses.	Total Expenses.
1	322	9½	452 13 0	RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.
2	361	10½	507 10 6	27	12 0	83	4 0	54	6 6	..	..	618	3 6
3	350	10½	492 3 0	30	7 9	99	14 0	142	6 0	..	..	835	8 3
4	261	9½	367 0 6	28	3 6	99	6 0	181	1 0	..	..	853	8 0
Total.	1294	40	1,819 11 0	26	3 3	389	3 0	187	9 0	..	..	710	7 9
				112	10 6	288	7 0	594	4 0	202	11 0	3,017	11 6

APPENDIX D. 17.

POLLACHI LINE.

Week.	Miles.	Memo Collection.	Way Collection.		Total Collection.		Total Expenses.		Credit.		Debit.	
			RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.
1	4456	1,433 13 0	602	10 0	2,036	7 0	618	3 6	1,418	3 6	..	..
2	4800	1,474 9 0	628	2 0	2,102	11 0	835	8 3	1,267	2 9	..	..
3	4,850	1,351 0 0	636	3 0	1,987	3 0	853	8 0	1,133	11 0	..	..
4	3600	1,040 13 0	485	11 0	1,526	8 0	710	7 9	8,160	0 3	..	..
Total.	17706	5,300 3 0	2,352	10 0	7,652	13 0	3,017	11 6	4,635	1 6	0 4	2*

Conductor.

November 1937.

Bus. Driver.

Pollachi Line.

* Net credit per mille.

APPENDIX D. 18.

UNITED MOTORS (COIMBATORE) LIMITED, COIMBATORE.

(1) *Bus Co.: 2690 fitted with Dorman Diesel Engine on Bedford Chassis.*

Month.	Miles run.	Diesel Oil Gl.	Diesel oil cost.	L. Oil Gls.	Lubricating oil cost.	Total cost.	Expenses per mile.
			RS. A. P.		RS. A. P.	RS. A. P.	RS. A. P.
July	3,472	139	78 3 0	2	5 12 0	83 15 0	0 0 5
August	3,323	124	69 12 0	3½	11 4 0	81 0 0	0 0 5
September	3,600	136	76 8 0	1	3 0 0	79 8 0	0 0 4
October	3,700	138	77 10 0	1	3 0 0	80 10 0	0 0 4
November	3,300	114	64 2 0	½	0 12 0	64 14 0	0 0 4
Total	17,395	651	366 3 0	8	23 12 0	389 15 0	0 0 4

(2) *Bus Co.: 2695 fitted with (Perkins) Diesel Engine on Bedford Chassis.*

Month.	Miles run.	Diesel Oil Gl.	Diesel Oil cost.	L. Oil Gls.	Lubricating oil cost.	Total cost.	Expenses per mile.
			RS. A. P.		RS. A. P.	RS. A. P.	RS. A. P.
July	3,300	148	83 4 0	3½	9 4 0	92 8 0	0 0 5
August	2,269	80	45 0 0	½	0 12 0	45 12 0	0 0 4
October	946	45	25 5 0	2½	7 8 0	32 13 0	0 0 7
November	2,848	122	68 10 0	½	0 12 0	69 6 0	on other tests. 0 0 4
Total	9,363	395	222 3 0	6½	18 4 0	240 7 0	0 0 4

Bus M. L. 1914 fitted with Petrol Engine Bedford Chassis.

Month.	Miles. run.	Petrol Gls.	Petrol cost.		L. Oil Gls.	Lubricating oil cost.		Total cost.	Expenses per mile.
			RS.	A. P.		RS.	A. P.		
July	..	3,302	241	289 15 3	5	14 12 0	304 11 3	0 1 6	
August	..	3,400	237	285 2 3	5½	14 7 0	299 9 3	0 1 5	
September	..	3,488	247	297 2 9	4½	12 6 0	309 8 9	0 1 5	
October	..	3,520	237	285 2 3	5½	15 2 0	300 4 3	0 1 4	
November	..	2,830	173	208 2 0	6½	16 8 0	224 10 0	0 1 3	
Total	..	16,540	1,135	1,365 8 6	26½	73 3 0	1,438 11 6	0 1 4.7	

Bus M.L. 1917 fitted with Petrol Engine Bedford Chassis.

Month.	Miles. run.	Petrol Gls.	Petrol cost.		L. Oil gls.	Lubricating Oil cost.		Total cost.	Expenses per mile.
			RS.	A. P.		RS.	A. P.		
July	..	3,794	247	297 2 9	3½	9 7 0	306 9 9	0 1 4	
August	..	3,143	202	243 0 6	3½	8 15 0	351 15 6	0 1 3	
September	..	3,400	213	256 4 3	5	13 12 0	270 0 3	0 1 3	
October	..	3,788	232	279 2 0	5½	13 12 0	292 14 0	0 1 3	
November	..	3,040	205	246 11 3	11½	30 15 0	277 10 3	0 1 6	
Total	..	17,165	1,099	1,322 4 9	28	76 13 0	1,399 1 9	0 1 3	

APPENDIX E. 1.

LONDON TRANSPORT SYSTEM.

Details of Working Expenses.

Railways.

Administration	..	..	194,672
Maintenance	..	..	1,208,469
Running Expenses	..	..	1,494,264
Traffic Expenses	..	..	784,343
Running Powers (Credit)	..	..	7,813
			<hr/>
Provision for Renewal	..	..	3,673,935
			855,627
			<hr/>
Total	..		4,529,562
			<hr/>

Buses and Coaches.

Administration	..	..	462,785
Maintenance—		£	
Rolling Stock	..	1,708,905	
Buildings	..	55,169	
Transfer to Maintenance Reserve	..	614	
		<hr/>	1,764,688
Running Expenses—			
Fuel (including duty)	..	2,230,789	
Wages and clothing of drivers and conductors.		6,678,832	
Car cleaning and other garage expenses	..	985,455	
Tyres	..	224,221	
		<hr/>	10,119,297
Traffic Expenses—			
Wages and clothing of Traffic Staff	..	291,404	
Ticket service	..	100,453	
Licensed vehicle duty and licensing fees	..	523,843	
Miscellaneous	..	82,007	
		<hr/>	997,707
			<hr/>
Provision for Renewal	..		13,344,477
			1,009,090
			<hr/>
Total	..		14,353,567
			<hr/>

APPENDIX E. 2.
London Passenger Transport System.
CAPITAL.

	Total London Transport stocks out- standing at 30th June. £	Capital Expenditure at 30th June. £	Provision for Renewal year ended 30th June. Amount. £	Percentage of Capital Expenditure.	Percentage of Gross Revenue.	Balance available in Renewal reserve at 30th June. £
In respect of transferred or acquired undertakings.						
1934	110,176,486*	111,251,852†	..	..	..	..
1935	111,535,454	111,575,969	20,20,500	1.81	7.0	1,971,597
1936	111,535,454	113,152,136	25,26,200	2.23	8.3	4,331,340
1937	111,933,867	118,088,715	23,00,000	1.95	7.4	6,409,417
1938	111,933,867	123,777,419	24,00,000	1.94	7.5	8,302,780
	111,933,867	131,281,061	24,25,000	1.85	7.4	9,818,497
Increase over 5 years.	1,757,381	20,029,209	..	..	..	..

* Issued at varying dates during the first 3 years.

† Assets acquired at varying dates during the first 3 years.

APPENDIX E. 3. *London Passenger Transport System.*

TRAFFIC.

Year ended 30th June.	Passenger Jour- neys originating on Board's system.	Boards Pas- senger Receipts after operation of the London Passenger Pool- ing Scheme.	Average Passenger Journey (All Pool Journeys).	Service Passenger Car Miles run by the Board's vehicles.	Car Miles per head of population.	Rides per head of population (All Pool Journeys).
	£	£	£	£	£	£
1934	3,396,000,118	27,151,277	2,305	514,555,269	54.9	432
	100	100		100		
1935	3,582,348,430	28,823,262	2,368	533,835,733	56.3	437
	105.5	106.2		103.7		
1936	3,647,962,633	29,532,879	2,312	546,691,942	57.1	440
	107.4	108.8		106.2		
1937*	3,636,393,610	30,077,161	2,347	544,630,459	56.1	436
	107.1	110.8		105.8		
1938	3,723,655,768	30,758,440	2,341	567,029,870	57.9	441
Increase in 4 years.	327,655,650	3,607,163	0.036	52,474,601	3.0	9
Per cent	9.6	13.3		10.2		

* Central Bus Strike, 1st to 27th May 1937.

APPENDIX E. 4.
LONDON PASSENGER TRANSPORT SYSTEM.
Summary.

	Expenditure.	Provision for Renewal.	Total.
	£	£	£
Railways ..	3,673,935	855,627	4,529,562
Buses and Coaches ..	13,344,477	1,009,090	14,353,567
Trams ..	3,649,728	303,306	3,953,034
Trolley buses ..	1,569,401	256,977	1,826,378
General Expenses ..	2,685,715	..	2,685,715
Total ..	24,923,256	2,425,000	27,348,256

Passenger Receipts.

	£	£
Railways .. .. .	..	19,512,895
Buses and Coaches—		
Ordinary	16,177,628	
Season	59,023	16,236,651
Trams Ordinary	3,493,800	
Workmen	627,499	4,121,299
Trolley buses Ordinary	1,950,350	
Workmen	298,984	2,249,334
Total ..		42,120,179

Average Receipt per Passenger Journey 2·341d.

*Number of Passenger journeys originating on the
Board's system.*

	£	£
Railways .. .. .	..	487,749,023
Buses and Coaches ..	2,165,176,787	
	2,132,765	2,167,309,552
Trams .. .. .	..	700,932,969
Trolley buses .. ..	..	367,664,224
Total ..		3,723,655,768

APPENDIX F. 1.

Rates average earnings per vehicle mile and the average load per vehicle at each out-agency on the Nizam's State Transport System during 1938-39.

Out-Agency	Rail-head.	Distance in Miles.	Rate per maund mile.	Average earnings per vehicle mile (Goods and parcels).		Average load per loaded vehicle.		Serial No.
				1937-38.	1938-39.	1937-38.	1938-39.	
Bhalsa	Basar	18	1 pie per maund mile.	Pies. 50.2	Pies. 58.1	Tons. 2.37	Tons. 2.70	1
Adilabad	Nizamabad	92	{ * " }	50.3	35.6	1.83	3.19	2
Nirmal	"	42		42.0				3
Amrur	"	16						4
Medak	Akanapet	14	"	38.1	35.3	1.50	1.34	5
Karimnagar	Warangal	48	"	49.3	43.5	1.53	1.54	6
Nalgonda	Bhongir	44	½ pie per maund mile.	20.0	23.4	1.36	2.22	7
Suriapet	Khammameth	39	"	18.1	26.0	1.59	3.17	8
Bir (Nizam)	Jalna	66	0.64 pie per maund mile.	31.2	41.8	1.91	2.61	9
Mashirabad	Secunderabad	3	2 pies per maund mile.	80.2	72.8	1.79	1.57	10
Aurangabad	City Aurangabad	3	1.67 pies per maund mile.	77.9	62.1	2.01	1.65	11
Azamabad	Secunderabad	3	2 pies per maund mile.	..	96.1	..	2.56	12

* ½ pie per maund mile for local booking from 22nd December 1938.

*Note:—*For out-agencies 1 to 9 a reduced rate based on 0.75 pie per maund mile had been granted for the cement traffic to Messrs. Khan Bahadur Ahmed Alladin & Sons, Secunderabad, from 12th August 1937.

APPENDIX F. 2.

*Statement showing details of Goods Traffic handled at each Out-Agency on the N. S. S. Railway.**

Serial No.	Out-Agency.	1937-38.		1938-39.					
		No. of months during which out-agency operated.	Tons. carried.	No. of months during which out-agency operated.	Tons. carried.				
			Railway Earnings.	Road Earnings.	Railway Earnings.	Road Earnings.			
			Rs.	Rs.	Rs.	Rs.			
1.	Karimnagar	12	359	4,035	2,575	12	388	5,327	2,790
2.	Mashirabad	8	3,918	33,286	3,384	12	3,492	46,240	3,024
3.	Nalgonda	12	464	1,786	1,578	12	916	4,063	3,126
4.	Suriapet	12	1,080	4,958	3,193	12	5,435	26,611	15,541
5.	Adilabad	12	360	7,884	4,611	12	1,787	15,513	12,355
6.	Amrur	12	359	4,572	1,135	12	266	4,838	809
7.	Aurangabad	6	4,679	22,651	3,421	12	8,150	42,595	6,083
8.	Bhaisa	12	6,576	94,201	16,501	12	4,135	44,994	10,438
9.	Bir (Nizam)	12	908	6,955	6,132	12	2,890	16,409	17,636
10.	Medak	12	1,033	9,846	2,180	12	945	9,443	1,996
11.	Nirmal	12	772	7,338	4,325	12	561	6,211	3,410
12.	Azamabad	..	..	..	..	9	1,683	9,951	1,433
Total		..	20,508	1,97,512	49,035	..	30,648	2,42,195	78,641

* Figures compiled from the Annual Report of the General Manager of H. E. H. Nizam's State Railway for the year ending 31st March 1939. P. 29.

APPENDIX G.

A Comparative Study of the rates charged for Canal and Bus Transport in the West Godavary District with special reference to competitive rates where prevalent. (Figures as obtaining till November 1937).

Name of Place From Narsapur to	Distance travelled in miles.	Rates charged.		Remarks regarding Time taken.
		Canal Transport. RS. A. P.	Bus Transport. RS. A. P.	
Palacole	6	0 1 0	0 2 0	Travelling bus will be at the rate of 20 miles per hour and by boat at the rate of 2 miles per hour on an average.
Kavitam	11	0 2 0	0 4 0	
Martair	14	0 2 0	0 5 0	
Penugonda	16	0 3 0	0 6 0	
Peravali	23	0 4 0	0 8 0	
Thupanu	26	0 5 0	0 8 0	
Nidadavolu	35	0 5 0	0 8 0	

Name of Place. (From)	Name of Place. (To)	Miles Travelled.	Rates charged.		Remarks regarding time taken.
			Canal Transport. RS. A. P.	Bus Transport. RS. A. P.	
Martair	Penumantra	7	..	0 2 0	
	Attili	11	..	0 4 0	
	Pippara	16	..	0 6 0	
	Tadipalligudur	22	..	0 8 0	
Martair	Kodir	8	..	0 2 0	
	Sidhantam	7	..	0 3 0	
Nidadavolu	Ellore	50	0 4 0	0 12 0	
Narsapur	Rajole	12	0 4 0		
Vizeswaram	Rajahmundry	6	0 1 6		
Rajahmundry	Badrachalam	100	2 8 0		
Badrachalam	Dommagudem	12	..	0 5 0	

At the rate of 6 miles per hour.
By launch do.
By bus.

Motor launch. {

APPENDIX H. 1.

Specimen Bin Card used on the U. M. S., Coimbatore.

From	Serial No.	Total miles run.	Memo	Collections.	Way	Collections.	Total	Collections.	Total	Expenses.	Credit.	Debit.	For 21 seater	Debit or Credit.	No. of days bus	went on line.	No. of days in	W. shop.	Name of Driver—	days present.	Name of	Conductor—	days present.	Line.	Standard No.	of seats.
------	------------	------------------	------	--------------	-----	--------------	-------	--------------	-------	-----------	---------	--------	---------------	------------------	-----------------	---------------	----------------	----------	-----------------	---------------	---------	------------	---------------	-------	--------------	-----------

Bibliography.

- Acworth, W.: Elements of Railway Economics.
Agg and Brindley: Highway Administration and Finance.
Brunner: The Problem of Motor Transport.
Bonavia: Economics of Transportation.
Bell Horace: Railway Policy in India.
Cleveland Slivens: English Railways.
Daggett: Principles of Inland Transportation.
Dunnage: Britain's New Profession.
Dunnage: Transport and the Public.
Douglas Knoop: Outlines of Railway Economics.
Daniels, W. M.: American Railroads.
Dutt: India under the Victorian Age.
Farrar: How to make the British Railways pay?
Fenelon, K. G.: Economics of Road Transport.
Fenelon, K. G.: Transport Coordination.
Fenelon, K. G.: Railway Economics.
Fournier: Railway Development in Canada.
Frankel: Railway Policy in South Africa.
Ghosh, S. C.: A. Monograph on Indian Railway Rates.
Ghosh, S. C.: Indian Railway Problems.
Ghosh, S. C.: Organisation of Railways.
Gadgil and Gogate: Motor Bus Transportation.
Gilbert, C. W.: Motor Insurance.
Guha, S. K.: Transport Coordination in India.
Haines: American Railway Management.
Jackman: Economic Principles of Transportation.
Jones: Principles of Public Utilities.
John Bauer: Public Utility Regulation for purposes of Rate Control.
Kirkaldy and Evans: History and Economics of Transport.
Jagtiani, H. M.: Role of the State in the Provision of Railway.

- Locklin, D.: Economics of Transportation.
- Lele, P. R.: Federation of India.
- Morrison: Socialisation and Transport.
- Molesworth, G. L.: Indian Railway Policy.
- Mehta, N. B.: Indian Railways, Rates and Regulation.
- Mukherji, R.: Economic Problems.
- MacGeorge: Ways and Works in India.
- Marshall: Principles of Economics.
- Marshall: Industry and Trade.
- The Madras Agriculturists' Relief Act—A Study by
B. V. Narayanaswamy Naidu and P. Vaidyanathan.
- The Madras General Sales Tax Act—A Study by
B. V. Narayanaswamy Naidu and S. Tiruvengadathan.
- Newbold: Railways.
- Pratt, E. A.: History of Inland Transport and Communication.
- Pratt, E. A.: Nationalisation of Railways.
- Pratt, E. A.: The Railway State Muddle in Australia.
- Pilcher, R. S.: Road Transport Operation.
- Sherrington, C. E. R.: A Hundred Years of Inland Transport.
- Sherrington, C. E. R.: Economics of Rail Transport in Great Britain.
- Sanyal, N.: Indian Railways.
- Shah, K. T.: Indian Tariffs and Transport in India.
- Sarkar, B. K.: Inland Transportation and Communications.
- Shah, K. T.: Sixty Years of Indian Finance.
- Srinivasan, K. C.: The Law and Theory of Railway Rates.
- Stratchey, R.: Public Works in India.
- Sharfman: The Interstate Commerce Commission.
- Thomas, P. J.: Commodity Prices in South India.
- Tiwari, R. D.: Freight Rates in India.
- Taussig, F. W.: Principles of Economics.
- Van Biljon: State Interference in South Africa.
- Wahl Paul: Road and Rail in Forty Countries.
- Zweig, F.: Financing of Consumer's Credit.

REPORTS AND OTHER PUBLICATIONS.

- The Indian Fiscal Commission Report.
- The Indian Industrial Commission Report.
- The Famine Commission Report. 1880 and 1901.
- The Indian Coal Committee Report.
- The Mackay Committee Report.
- Thomas Robertson's Report on Indian Railway Administration 1903.
- The Acworth Committee Report 1921.
- The Indian Railway Committee Report 1937.
- The Indian Labour Commission Report.
- Madras Administration Reports.
- Reports of the Director of Industries, Madras.
- Report of the Royal Commission on Agriculture in India.
- The Madras Motor Vehicles Taxation Act 1914.
- The Madras Motor Vehicles Taxation Act 1931.
- The Madras Road Traffic Control Act 1938.
- The Madras Motor Vehicles Code 1938.
- Debates of the Madras Legislative Council.
- Debates of the Madras Assembly.
- Debates of the Central Legislative Assembly.
- Debates of the Council of State.
- Parliamentary Debates.
- Report on the present State of Road-Railway Competition and the possibilities of their future Co-ordination and development, and cognate matters in Governors' Provinces by K. G. Mitchell & L. H. Kirkness.
- The Motor Vehicles Insurance Committee Report 1936.
- Central Government Budgets.
- Madras Government Budgets.
- Report of the Indian Road Development Committee 1927-28.
- Scheme of Road Development for the Madras Presidency—A. Vipian.
- Agricultural Marketing Reports:—
 - Marketing of Wheat.
 - Marketing of Linseed.

Road-Rail Transport

Marketing of Tobacco.

The Indian External Capital Committee Report.

Evidence submitted by five Indian Witnesses before
the Commission on Public Expenditure.

Large Scale Establishments in India.

History of Indian Railways. Government Publication.

Review of the Trade of India.

Review of the Trade in Motor Vehicles (U.K.).

The Pope Committee Reports on the need for economy
in Railway Expenditure.

Indian Financial Enquiry: Report of Sir Otto
Niemeyer.

Annual Statement of the Sea-borne Trade of British
India.

Rail River Borne Trade in India.

Reports of the Permanent International Association
of Road Congresses.

Statistical Abstract for British India.

Reports of the Public Works Department, Madras.

Report of the Public Accounts Committee.

Reports of the Various Chambers of Commerce.

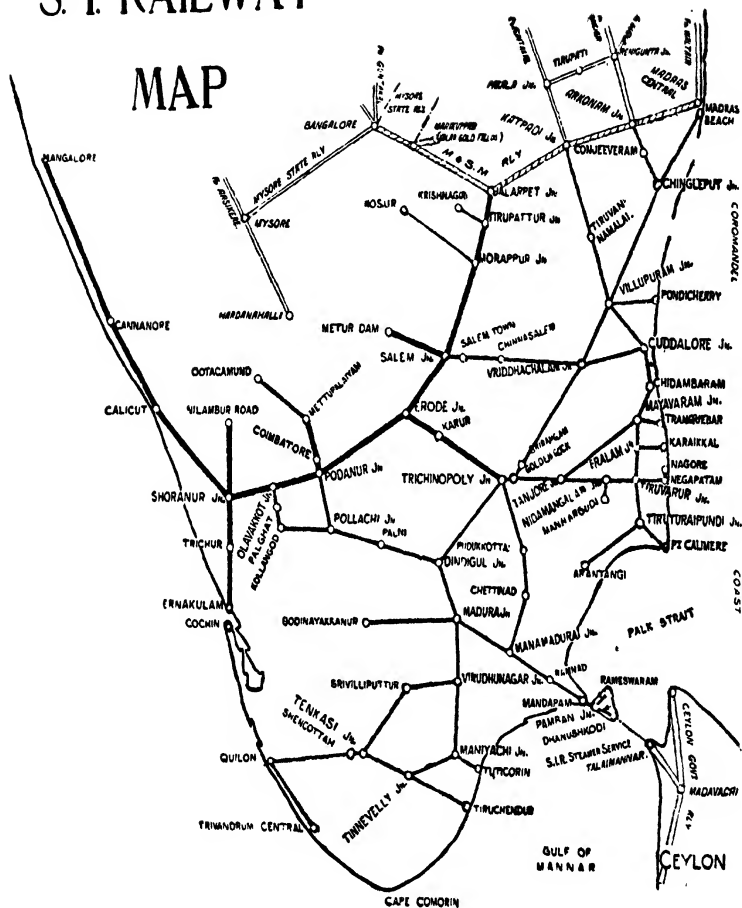
Report of the Committee on Indian Railway Workshop
Reforms.

Tariff Board Reports.

Fort St. George Gazette.

Imperial Gazetteer of India.

S. I. RAILWAY MAP



INDEX

	PAGES
Administration of Railways:—	
Committees appointed and their recom- mendations	210-221
Interest charges	223
Contribution to the General Revenue ..	224-225
Working expenses	229
Strategic lines	226
Scope for retrenchment in expenditure ..	240
Ticketless travel	253
Federal Railway Authority	264-266
Branch Railway Lines:—	
Acworth on construction of	92, 258
Advantages and disadvantages of ..	254
Commodities:—	
Classification of	58; 66
Coal:—	
History of the Railway rate levied ..	116
Tobacco:—	
Export and import of	144-150
Rate for export of	150-158
Incidence of rate on	158-162
Linseed:—	
Export of	165-167
Means of transport of	167
Railway freight rate on	168
Incidence of rate on	169
Reduction of rate on	170
Incidence of rate on oil and oil cakes ..	171-175
Groundnuts:—	
Export of	176-178
Freight rate on	184-187
Rate for oil	188-189
Incidence of the rate	189-190

Road-Rail Transport

	PAGES
Rice:—	
Export and import of	194–200
Price of	201–202
Railway freight rate on	203–208
Competition:—	
In transportation	93–98
Between different routes	91
„ Railway Companies	93
„ Railway and other forms of transport	93
„ Shippers	96
Road-Rail competition—findings of Mitchell and Kirkness	261
„ examples	350–355
Costs:—	
Definition of	45
Methods of charging	60
Apportionment of Joint costs on different Railways	87
Method to be adopted	333
Depreciation	335
Taxation	339
Transportation costs	321
Country cart and animal Transport:—	
Description of	308
Electric Trains:—	
Advantages of	273, 318
Expenditure:—	
Items of Railway expenditure	43
Interest charges	223
Contribution to the General Revenue	224
Working of strategic lines	226
Working expenses	229;
	236–240

	PAGES
Suggestions for the reduction of	240-244
To maximise income	286
Federal Railway Authority:—	
Duties of	264
Hyderabad State Transport:—	
Railways	401-403
Roads	403-407
Co-ordination of transport services ..	413-414
Motor Transport:—	
Economy of	296
Advantages of	310
Rates and fares of	349
Freight transport	355
Receipts	358
Expenditure:—	
Capital expenses	328
Working expenses	325
Depreciation	336
Taxation	340
Coimbatore (The United Motor Service) ..	416-428
Railways in India:—	
Management of	23
Defects of guaranteed system	24-26
Classification	28-29
Railway policy	29-30
Committees appointed:—	
Jayakar Committee	16
Acworth Committee	103, 232
Mackay Committee	232
Wedgewood Committee	283

Road-Rail Transport

	PAGES
Rates:—	
Classification	66-70
English Railway Rates Committee ..	79-80
Railway	37
And costs	40
Special	46
Cost of service theory	48-53
Value of service theory	53-56
What the traffic can bear	54
Equal mileage	56
Terminal and varying	59
Other methods of charging	60
Fixing of	63
Obtained in India	70
Exceptional	77
Station to station	73
Influence of distance	81
Volume determining	90
Branch line	91
Blanketing	98
Midnight freight	101
Discrimination in rates between Localities ..	103
" " " persons ..	103
" " " commodities ..	106
" " " distance ..	107
" " in relation to indus-tries ..	283
Railway Rates Tribunal	277
Railway rates in relation to coal ..	115
" " " tobacco ..	141
" " " linseed ..	162
" " " groundnuts ..	176
" " " rice ..	191

	PAGES
Revenue:—	
Passenger revenue	245-248; 284
Ticketless travel	253-254
Augmenting of	266-268
Farrar's novel suggestion to increase the rail- way revenue	270
Goods traffic	276
Quick transit of goods	283
Allocation of sites to industries	278
Road-rail co-ordination	279; 286
Roads in India:—	
Before the British rule	7-8
Under the British rule	8-9
The financing of roads	11-17
Recent developments in road maintenance	14
Mitchell-Kirkness Committee on roads	15, 18
Roads and bullock-carts	19-20
Tramways	316-318
The London Passenger Transport Board	429-436
Transport—Legislation to control—	
Control of Motor Transport	437
The Madras Motor Vehicles Regulations	438; 461-467
Principles of control	444-448
Indian Motor Vehicles Act	450
Taxation in Madras	462-467
The Madras Road Control Traffic Act	467
Great Britain	475-480
U. S. A.	480-482
Ireland	482-484
Other countries	484-488

Road-Rail Transport

	PAGES
Travancore State Transport:—	
Capital expenses	323
System of	362
Features of	379
Administration of	384
Results of *	392

ECONOMIC SURVEYS UNDERTAKEN BY THE ECONOMICS DEPARTMENT

1. A study of the working class family budgets (Madras, Nellikuppam and Coimbatore) by Dr. B. V. Narayanaswamy Naidu and Mr. V. Sivaraman, M.A., M.LITT.
2. "The Problem of Rural Indebtedness" by Dr. B. V. Narayanaswamy Naidu and Mr. V. Venkataraman, M.A.
3. "A survey of the working of the Co-operative Movement in South Arcot and Salem" by Mr. V. R. Kuppuswami, M.A.
4. "Economic Survey of the weavers of Sulerpeta" by Mr. N. S. Krishnamurthy, M.A., B.L., and Mr. P. Vaithinathan, M.A.
5. "A survey of the working of the Madras Agriculturists' Relief Act in the South Arcot District" by Mr. P. Vaithinathan, M.A.
6. "A survey of the working of Prohibition in the Salem District" by Mr. C. Jagannathachari, M.A., M.LITT.
7. "The Madras General Sales Tax Act—a Study" by Dr. B. V. Narayanaswami Naidu and Mr. S. Tiruvengadathan, B.A. (HONS.).
8. "A survey of the Road Transport in Travancore and Coimbatore" by Mr. S. R. N. Badri Rao, M.A., M.LITT.

BULLETINS PUBLISHED

1. "Distributive Co-operation in India" by Mr. V. G. Ramakrishna Iyyar, M.A.
2. "The Madras Agriculturists' Relief Act—a Study" by Dr. B. V. Narayanaswamy Naidu, M.A., B.COM., PH.D., BAR.-AT-LAW, and Mr. P. Vaithinathan, M.A.

Road-Rail Transport

3. “ Report on the working of Prohibition in Salem ”
by Mr. C. Jagannathachari, M.A., M.LITT.
4. “ The Madras General Sales Tax Act—a Study ” by
Dr. B. V. Narayanaswamy Naidu, M.A., B.COM.,
PH.D., BAR.-AT-LAW, and Mr. S. Tiruvengadathan,
B.A. (HONS.);

BOOKS PUBLISHED

1. “ Factory Labour in India ” by Dr. Mukthar, M.A.,
PH.D.
2. “ Road-Rail Transport ” by Mr. S. R. N. Badri Rao,
M.A., M.LITT.

IN THE PRESS

- “ A Text-Book of Economics for Intermediate classes ”
(in Tamil) by Mr. V. G. Ramakrishna Iyyar, M.A.

